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Volume 201, Number 13 | Domestic $6 per Annum, 25c per Copy Canada $7.04, Foreign $7.56 | SEPTEMBER 26, 1929 | Published Weekly in Boston at 126 Massachusetts Avenue

CONTENTS

Icterus Index Studies in Lobar Pneumonia II. Relationship of the Icterus Index Curves to Crisis and Fluid Pleural Exudates. *Norman W. Elton* 611

The Acclimatization of the White Race in the Tropics. *Robert DeC. Ward* 617

MASSACHUSETTS MEDICO-LEGAL SOCIETY

An Unusual Case of Matricide. *Fred Durgin Jones* 628

Embolism as a Causative Factor in Death. *Myrtelle M. Canavan* 630

Report of a Case of Tularemia. *Paul R. Withington* 634

VERMONT STATE MEDICAL SOCIETY 636

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Case 15391—Precordial Pain and Dysphagia. *Richard C. Cabot.* Case 15392—Should You Have Made the Same Mistake in This Case? *A. William Reggio* 641

EDITORIALS

Public Health and the Physician 647

Are Doctors Blameworthy? 647

This Week's Issue 648

(Contents continued on next page)

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CONTENTS

(Continued)

THE MASSACHUSETTS MEDICAL SOCIETY

Stated Meeting of the Council 648

CORRESPONDENCE

Dr. Pusey's Comment on an Editorial. William Allen Pusey 654

The Transfer of Narcotic Drug Licenses. George H. Crosbie 654

Transfers in the Massachusetts Department of Public Health. George H. Bigelow 654

MISCELLANY

High Blood Pressure 627

The Manufacture of Fused Quartz Window Glass 646

A Menace to Surgeons 652

An Outbreak of Vacation Typhoid Fever 633

Psychiatric Clinics for Children Listed 646

Résumé of Communicable Disease in Massachusetts, August, 1929 653

Some Parasitic Diseases That May Be Transmitted by Dogs and Cats 635

Survey of Crime Detection and Prevention 652

The Thirteenth International Physiological Congress. (Continued.) 648

Undulant Fever 633

Weekly Health Index 652

NEWS ITEM 657

NOTICES 648, 657

OBITUARY 655

RECENT DEATH 655

REPORTS AND NOTICES OF MEETINGS 657

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES 658a

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The next Annual Meeting of the Massachusetts Medical Society will be held at Plymouth, June 10 and 11, 1930

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VOLUME 201 SEPTEMBER 26, 1929 NUMBER 13

ICTERUS INDEX STUDIES IN LOBAR PNEUMONIA II

Relationship of the Icterus Index Curves To Crisis and Fluid Pleural Exudates

BY NORMAN W. ELTON, M.D.*

THE accompanying tables and charts present the results of a study of the latent jaundice of lobar pneumonia in a series of 70 consecutive cases admitted on the Medical Service of the Highland Park General Hospital, Detroit, Michigan, from August 1, 1928, to July 1, 1929. In these cases the icterus index was determined daily during the acute course of the disease, and in the later cases of the series the van den Bergh reaction and the quantitative serum bilirubin were determined daily. In this way the characteristics of this latent jaundice were disclosed.

A paper reporting the first 36 cases of this series[14] was published in the *Journal of the Michigan State Medical Society* in June, 1929, but the addition of 34 more cases has made possible certain new observations.

Unfortunately, due to limited laboratory facilities, the exact etiological organism was not determined in all these cases. A few were typed successfully by mouse inoculation, but not enough to show any relationship between the type of pneumococcus and the intensity of the latent jaundice. In all, except those of influenzal origin, diplococci, morphologically similar to pneumococci, frequently associated with streptococci and staphylococci, were observed in smears, and all except the influenzal cases were undeniably primary lobar pneumonia, confirmed by x-ray in most cases, and clinically characteristic of the pneumococcic type. The etiology in the next series will be thoroughly worked out because of the striking characteristics of the latent jaundice encountered and the fact that the pneumococcus is a bile-soluble organism. The work so far completed is suggestive of the existence of a bile-solubility mechanism accounting for the crisis phenomenon quite often observed in primary lobar pneumonia.

Only three cases in this series of 70 were clinically jaundiced, C 17, B 16, and Z 6. All others with indices above 16 would not have been selected clinically as having any definite manifestation of jaundice. Many showed a suggestive yellow in the sclerae, but would ordinarily be overlooked. Hence, data as to the prognostic significance of jaundice in lobar pneumonia, heretofore based on clinical observation, may be regarded as wholly misleading. It is to be observed that in this series many cases with typical courses and typical crises gave indices well above 17, but no fatal case ever exceeded this figure. Crisis may occur at an index below 17, however.

Before the cases here reported were grouped as they are now, they presented an apparently chaotic variety of findings. It was soon found, however, that there were certain types of curves, depending on the behavior of the pneumonic process. Whenever the roentgenologist reported findings suggestive of pleural exudate demonstrable by x-ray, either the icterus index had already dropped more or less precipitously to normal after an initial elevation, or else the index did so drop promptly thereafter. Evidently the latent jaundice occurs only when the pneumonic process is in the purely intra-alveolar phase, and subsides as soon as a fluid exudate occurs in the pleural cavity.

The other type of curve commonly encountered was the rising curve with its maximum on the day of crisis or of death. There are two modifications of this, one the fixation curve as in C 20, and the other the lag curve as in C 13.

DESCRIPTION OF TABLES AND CHARTS

Group A includes all cases having had typical courses with true crises and no appreciable return of fever. A 8, however, had a temperature oscillating between 101°-102° instead of the typical plateau at 103°-104° and may have had some pleural exudate, since the index curve is suggestive. The curves of this group are plotted in Chart 1 with the curve of Z 6. The tendency toward maximum on the day of crisis, a sharp drop immediately after crisis, and the usual persistent elevation of the index above normal for several days after the crisis are fairly constant characteristics of this group. Only 11 out of 70 showed the definite crisis phenomenon.

Group B includes cases recovering after the establishment of demonstrable pleural exudates of the serous or sero-fibrinous, or sero-purulent varieties. These were diagnosed by x-ray. The

*For record and address of author see "This Week's Issue," page 648.

LOBAR PNEUMONIA ICTERUS TABLE TABLE 1

GROUP A TYPICAL COURSE WITH CRISIS

	DAY OF ILLNESS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	LOBE INVOLVED
1			10	13	14	18	25	24 C	10	20	14			7 23d	RM
2				8	7	17	20	20	23 C	10	14	9			RL
3		9	10	7	9 C	6	8							7 16th	LL
4						5	7 N C	7			7				RL
5				11 B 1.0	13 B 1.0 C	12 B .6	10	8		9					LA
6				6	4	C	7	8	5	6					RL
7							14 B 1.3 C	8 B .7						7 N 16th	LL
8			10 N 1.9	6	6 N 1.1 C	3	3		3 N .5						LL
9					10 N 1.7	8 N 1.4	15 B 2.2	19 B 1.4	15 B 1.6	20 B 2.5 C	15 B 1.4	10 B 1.3			LS
10			5	8 B .8 C	5 B .8	4 N .3									RL

GROUP B RECOVERY WITH EXUDATE

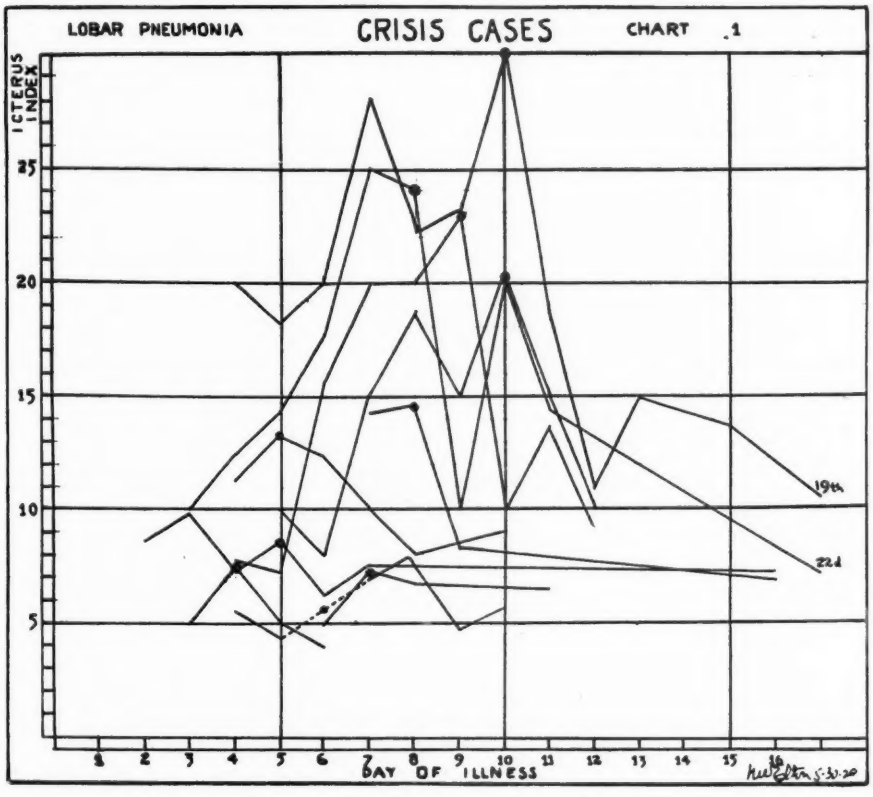
1							5 E?	11							LL
2							E	6							RS
3									4 N 1.0 E	5 N 1.7?	6 N .6				RS
4				8	5	6		5 E							LS
5				13	9	10	6	9			8 E			8 16th	LL
6				11 B 1.5	10 B .8	9 B .7	9	9	9 N .8					7 E N .4 19th	LS
7								5		3				E 16th	RL I
8											5			E 17th	RM I
9						3				E					LS I
10														4 E	RS
11					4 N .4	6 N .5	3 N .3			5				E 20th	RS
12								3	E						LS
13					8 .6	3 N E	4 N .3	3 N .2							LL
14						3 E									LL
15										3 E					RS
16		6 N .8	6 N .6	9 B 1.3	18 B 3.3	18 B 2.1	11 B 1.3	6 N .8	6 N .5 E					5 N .5	RL
17					6 N .2	6 N .5	E								LS I
18							E?				4 N .8				I
19							3 E								RL

LEGEND

ICTERUS INDEX — VAN DEN BERGH QUANTITATIVE BILIRUBIN mgms. per 100 cc. — EVENTS

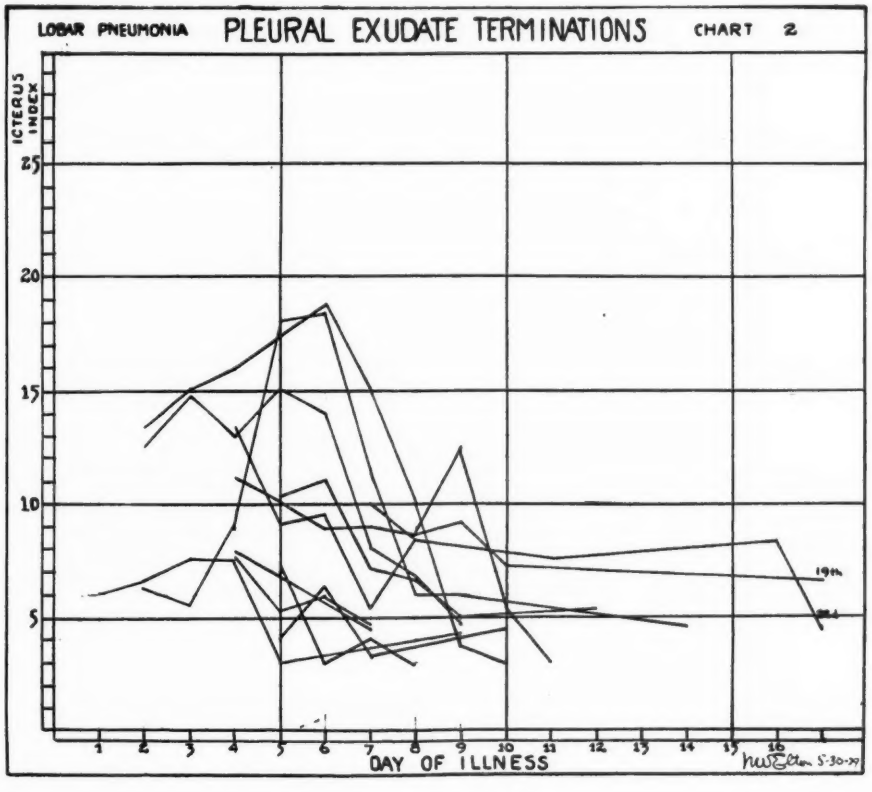
N = VAN DEN BERGH DIRECT REACTION NEGATIVE
B = VAN DEN BERGH DIRECT REACTION BIPHASIC
P = VAN DEN BERGH DIRECT REACTION PROMPT
C = DAY OF CRISIS
E = EXUDATE DEMONSTRABLE
D = DAY OF DEATH
I = INFLUENZAL FACTOR
A = AUTOPSY PERFORMED
PO = POST OPERATIVE

LL = LEFT LOWER LOBE
BL = BILATERAL LOWER LOBES
RL = RIGHT LOWER LOBE
RS = RIGHT SIDE
LS = LEFT SIDE
RM = RIGHT MIDDLE LOBE
LA = LEFT APEX
P = PREGNANCY [RIGHT COLUMN]
RU = RIGHT UPPER LOBE



characteristic curves are plotted on Chart 2. If the exudate was present on the day of admission, no elevation of the icterus index was found. Cases starting on the rise invariably broke to normal within 1-3 days when the exudative process commenced.

Group C includes all fatal cases. No death occurred with an index above 17. Here are en-



LOBAR PNEUMONIA ICTERUS TABLE TABLE 2.

GROUP C ALL DEATHS

	DAY OF ILLNESS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	CLINICAL NOTES
1				7	11	15	17 D								LL
2					14	9	14 D								BL
3		9	10	10 D											2100 RS
4							9 .3 D								LL PO
5						10 B .7	17 B 1.7	17 B 1.3 D							LL
6				5 .3	4	D									RU I
7					6	6	6 D								BL I
8		8	D												2200 BL I P
9			10 P 1.1	D											LL I P
10					10 B 1.1		D								BL I
11				8 N .5	13 B 1.2	15 B 2.3 D									2800 RL A
12	3	D													6100 RU I A
13		5	5	5	7 B .7	6	7 B 1.1		8 B 1.0 D						2700 RU
14		3	4	4	D										9200 RL I
15			6 B .8	5 B .6	5 B .5	6 B 1.1		5 B .7		2.6 B .4			E D		LL A I
16			8 N 1.3	8 N 1.0	6 B .7	4 N .5	D								7700 LL
17		10 B 1.7	11 N 1.5	12 B 1.5	15 B 2.3	14 B 3.2	15 3.3	17 B 3.1 D							8000 RL PO
18			4 ED												8000 BL I
19											4	E		25th D	LS
20						11 B 1.1	11 B 1.5	13 B 1.7	15 B 2.8	10 B 1.4	11 B 1.8	10 B 1.3	10 B 1.4 D		270000 BL
21				6 B? .8	3 B? .2	3 N				E				1.2 P 16th	RL
22						10 B 1.4	9 N 1.1	5 N E	4 N .5 D						LM RL

GROUP D MISCELLANEOUS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1			11			C		12							LL
2								C		14 P 1.3				7 B .3	BL PI
3		6 C?		5											RL
4						3 C	C	2.5							RM
5			3 N	5 B .6	5 .5 C			4							LL I
6			3 N						3 N					3 N	3800 TYPHOID FEVER 1-320

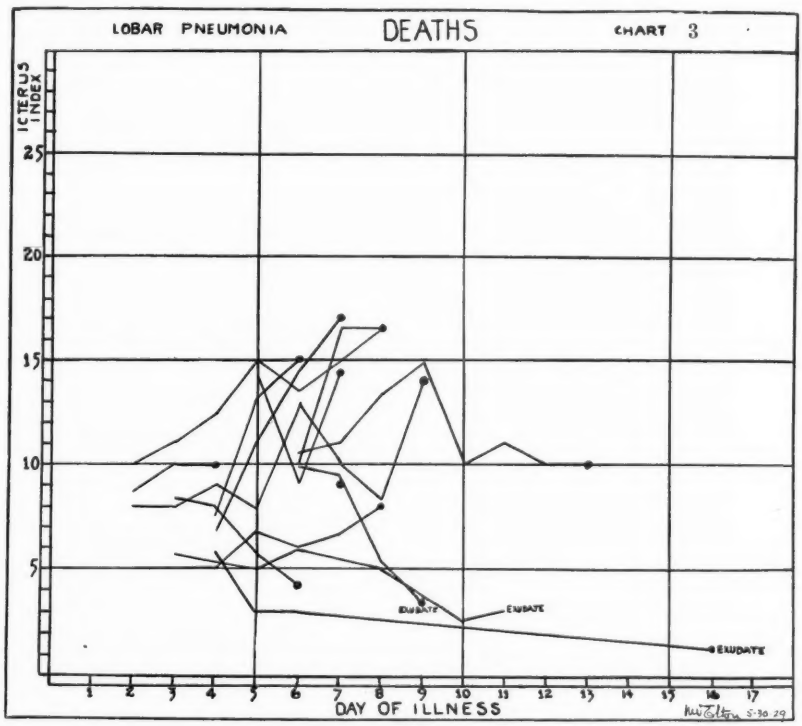
ATYPICAL LEUCOCYTE COUNTS IN RIGHT COLUMN

ICTERUS INDEX VAN DEN BERGH

QUANTITATIVE BILIRUBIN NOTES

countered both the rising curves and the dropping curves. Three of the four dropping curves were known to have had fluid in the pleural cavity. In the other it was not looked for.

Group Z is composed of additional cases, all of which can be classified in A, B, or C, as indicated on the tables. Z 11, 12, 13, 14 are not entered in the table but were as follows:



LOBAR PNEUMONIA ICTERUS TABLE SUPPLEMENTARY TABLE

DAY OF ILLNESS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	CLINICAL NOTES
GROUP Z NEW CASES															
1		13 N .9	15 N 1.0	16 B 1.3	18 B	19 B	15 B "C"	10	4 E	3					RL 8100
2		13 1.0	15 .8	13 1.4	15	14	8	7	5 E						RL
3							10 .7 E	9 .7	13 B	6	3				LL
4				8 E	6		5								RL PO
5				6	3	E?									L MID FIELD
6				20 B 2.2	18 B 1.5	20 B	28 B 1.6	22 B 3.2	23 B 3.4	30 B 3.0 C	19 B 1.8	11 B 1.1	15 B 1.3		RU I
7	6	7	8 .6	8 E	3			1.5?	4						RL 9100 I
8		8 N 1.0	8 N 1.3	9 N	8 N .9	13 N .9	10 N .8	8 B .9	14 B 1.1 D						RL A
9				8 B .7	D										RL
10					10 N .7	11 N .9	7 B .7	7 B .7 E	5 B .8			5			RM
11															

Group D is miscellaneous and includes a case of typhoid fever during its intense febrile course and in which no jaundice was encountered. The others were inadequately studied for proper classification.

Z 11—Index 6 on fourth day (quantitative bilirubin .45 mgms. per 100 cc and van den Bergh indirect only). Pleural exudate diagnosed by x-ray. Index dropped to 3 and remained at 3. Slow recovery. Empyema two months later.

Z 12—Index 13.6 on second day. X-ray negative

for any cardiac or pulmonary pathology (Z 8 had a negative X-ray on day of death but autopsy showed red hepatization). Van den Bergh biphasic 2 min. and quantitative bilirubin 1.8 mgms. per 100 cc. Recovery by lysis. Index dropped successively to 10, 6, 5. Van den Bergh became indirect only on fourth day and entirely negative on fifth. Quantitative bilirubin dropped successively to 1.1, .76, .32. Exudate type of curve.

Z 13—A case similar to Z 12. Lysis. X-ray showed right upper lobar pneumonia. Index from second day 10, 11.3, 7.5, 3.7. Van den Bergh biphasic. Biphasic 1¼ min., indirect only. Quantitative bilirubin 1.33, 1.0, .5. Exudate type of curve.

Z 14—Death on sixth day. Index, 9.4. Quantitative bilirubin 1.0. Van den Bergh biphasic.

THEORETICAL DISCUSSION

In this paper it is not the intention of the writer to discuss to any great extent the possibilities suggested by the occurrence of a constant and characteristic latent jaundice in a disease commonly caused by a bile-soluble organism. That there is bile in the blood stream is borne out by the presence of the direct prompt and direct biphasic van den Bergh reactions, but to conclude that the dramatic phenomenon of the crisis in pneumococcic lobar pneumonia is a bile-solubility phenomenon, though not inconceivable, still lacks adequate foundation. It is quite possible that the latent jaundice may be associated with the anoxemia of lobar pneumonia and that it is not specific for the pneumococcus. However, a toxic hepatitis, indicated by the biphasic van den Bergh reactions, and the characteristic focal areas of cell necrosis in the liver found in the cases of this series that came to autopsy, speaks strongly for the pneumococcus. The fact that in the pneumonia patient the specific antibodies do not appear to any measurable degree until just before, shortly after, or at the time of crisis[13] suggests that bile-solubility might be an auxiliary mechanism, since antibody for pneumococcus protein, though not type specific, is readily produced with the antigen obtained by solution in bile[15]. Furthermore, the daily icterus index determinations in non-influenzal cases enable the clinician to predict with a fair degree of accuracy whether or not a given case of lobar pneumonia is progressing toward true crisis or is developing a pleural fluid exudate, and, potentially, empyema.

REVIEW OF LITERATURE

In this series the Bernheim[4]-Maue[5] method of determining the icterus index[6] was employed. It was assumed that in the pneumonia patient there is very little possibility of the occurrence of any carotin or other pigment than bilirubin in the blood serum. It is doubtful if there is sufficient change in serum proteins to alter the physical findings in the colorimeter. In the tables decimals have been dropped and the nearest whole number used.

The method used for quantitative determination of the serum bilirubin is described by McNee[3], McNee and Keifer[2], and Hall[1].

Williams[10], in 1927, found the levulose tolerance curves in three cases of lobar pneumonia were normal. He does not state whether they were crisis cases or those with fluid exudates.

E. G. Ravdin[7], in 1925, observed in a series of nine lobar pneumonias one case with a prompt or immediate direct reaction and two that were biphasic. Four were delayed direct and two negative direct. In seven there was a marked elevation of bilirubin quantitatively. She concluded that in at least three of these there was reabsorption of bile, if van den Bergh's interpretation of the direct reaction is to be accepted.

S. Levin[8], in 1927, concluded from a study of children convalescing from pneumonia that the icterus index and van den Bergh test frequently gave evidence of liver damage before any of the other tests, except the protein meal test.

L. Schiff[9], in 1927, reports clinical jaundice in 21 out of 826 cases of lobar pneumonia, of which only 8 died, and concluded that jaundice was not of serious prognostic significance. The use of the icterus index might have contributed to greater precision in such a series.

Kipp[11], in 1920, followed the variation of blood cholesterol in lobar pneumonia and found that it was decreased as in other acute infections, rising above normal during convalescence.

SUMMARY

Seventy consecutive cases of lobar pneumonia are tabulated with significant clinical data, in all of which daily determinations of the icterus index were made during the acute course of the disease. In the greater number of these cases quantitative serum bilirubin determinations and van den Bergh tests were also made daily. The etiological organism was not established bacteriologically, but clinically all except those of influenzal origin were primary lobar pneumonia. Eighteen cases were preceded by influenza. Of these, 12 did not show any latent jaundice, but of the 12, 6 had demonstrable pleural exudates. Of the remainder, all except those known to have had pleural exudates on admission, and some in which long-standing exudates were discovered later, showed a latent jaundice, often with icterus index readings in the range of clinical jaundice, though clinical jaundice could not be definitely observed. When plotted on a graph these icterus index values form curves characteristic of the nature of the pneumonic lesion in the lung. When the pathology is purely intra-alveolar, a rising curve is obtained. A fixation curve and a lag curve, as described above, may be varieties of this rising curve. In these cases there is no pleural exudate demonstrable by x-ray or autopsy other than possibly a fibrinous one. The highest icterus indices were encountered in cases having true crises. No fatal case had an index above 17. When a pleural exudate of the sero-fibrinous or sero-purulent type developed, enough to be demonstrable by x-ray, or was found at autopsy, a precipitous drop of

the icterus index invariably signaled its onset, in cases having had a definite initial rise.

It is suggested that this latent jaundice, measured precisely by the icterus index, may be taken into consideration as a possible auxiliary mechanism in lobar pneumonia, when the etiologic organism is known to be the pneumococcus, and that the phenomenon of bile-solubility, as well as the presence of specific antibodies, may contribute toward producing the dramatic phenomenon of the crisis.

CONCLUSIONS

1. In primary lobar pneumonia a latent jaundice constantly occurs.

2. The icterus index is often found in the range of clinical jaundice, yet clinical jaundice may not definitely be present.

3. The icterus index reaches its highest values in cases terminating in true crisis. No fatal case in this series had an index exceeding 17.

4. The latent jaundice usually subsides precipitously upon the establishment of a fluid pleural exudate.

5. The graph of the daily icterus index curve of the cases in this series shows a rising curve, occurring in the presence of a purely intra-alveolar pneumonic process until crisis or death, and a declining curve in the presence of a fluid pleural exudate. The latter type of curve was always associated with cases that were potential empyemas.

6. Conclusions based on etiology must be deferred. Although the pneumococcus, which is bile-soluble, is commonly regarded as the etiologic agent in primary lobar pneumonia, it cannot be stated that it was the causative organism in all the cases of this series which underwent the phenomenon of crisis.

NOTE: The writer wishes to express grateful appreciation for co-öperation and valuable criticism in the preparation of this paper to Drs. R. B. Hasner, E. R. Le Count, David L. Belding, G. Van Amber Brown, B. Friedlaender, Plinn F. Morse, F. W. Hartman and the Staff of the Highland Park General Hospital.

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THE ACCLIMATIZATION OF THE WHITE RACE IN THE TROPICS*

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THE acclimatization of the white race in the tropics is a question which is largely medical in many of its aspects. I wish to make it clear that I write wholly as a layman in so far as the medical side of my topic is concerned. The subject, however, also very distinctly concerns the climatologist. It is from the climatological, rather than from the medical, side that I propose to treat it. The problem is one the solution of which—if there be a solution—requires the close co-öperation of medical men and of climatologists. The study of the physiological effects of tropical climates, and of tropical diseases, is the responsibility of the medical man. On the other hand, it is the business of the climatologist to set forth, in the greatest possible detail, all the characteristics of tropical climates, and, if the picture is not sufficiently complete or satisfactory for the purposes of the physician, to take steps to make it more so. While much work, and very excellent work, has been done by investigators of many nationalities, in many parts of the tropics, there still remain great gaps in our knowledge which must be filled before our conclusions can be considered wholly sound, or final.

To my own thinking, there are few more interesting problems awaiting study on the part of medical investigators than those that relate to the physiological effects of tropical climates on white men and women, and especially on children. Such studies should by no means be limited simply to the ordinary physical changes in the body. They should especially be extended to cover the nervous system and the mental effects. Incomplete as our present knowledge of this problem is, it is nevertheless possible for us to present certain fairly well ascertained facts. It is these that I wish to consider, always remembering that the future may very considerably change our present views, and that many phases of the acclimatization problem are very recent. The attention of the medical profession has naturally and properly been more concerned with the study of specific causes of tropical diseases than with the general physiological effects of tropical climates.

The acclimatization of the white race in the tropics is a question of vast importance. Upon it depend the future settlement, control, government and utilization of the tropics. It is becoming more important with the passing of the

*A lecture given at the Lowell Institute, Boston. The writer is indebted to Dr. Richard P. Strong for his kindness in reading the manuscript of this lecture, and for his helpful suggestions.

†For record and address of author see "This Week's Issue," page 648.

years. The increasing pressure of population in Europe demands an outlet. The need of an additional food supply in the not far distant future is turning our attention more and more towards the hot belt of the world. Tropical products, like coffee, rubber, quinine, spices, fruits, and lumber are desired in ever-increasing quantity. The land areas within the tropics are to a large extent under the control of extra-tropical nations, as colonies, or protectorates, or possessions of one sort or another. The future more and more looks towards the tropics. And what becomes of the tropics is for the white man to decide.

This problem is of concern to many. It interests the statesman, whose responsibilities include relations with tropical countries; the economist, who concerns himself with laws of population and with food supply; the medical man, whose business it is to fight disease and to improve conditions of health all over the world; the climatologist, whose intimate study of tropical climates is essential to any thorough understanding of tropical problems; the engineer, geologist, or business man whose livelihood is to be gained in tropical countries.

The literature is already very extended. We Americans are apt to forget that people of our own blood, of the British Isles, have had many long years of intimate contact with the tropics, and have made many important studies of the experience of their troops and of their civilians in hot countries. France has had her own dealings with the tropics, in Africa and in the Far East. Germany, also, more recently, chiefly in Africa, accumulated information along the same lines. When the United States became involved in tropical problems, at the time of the war with Spain, it was apparent to anyone at all familiar with European experience, and with the published results of that experience, that there was an almost complete, and to my own mind an absolutely inexcusable, ignorance on the part of our high military officials as to the proper selection, equipment and care of white troops who were to engage in tropical campaigns. Much of the suffering and illness, and many of the deaths among our own troops could, I believe, have been avoided had there been, in responsible quarters, better knowledge of what England learned as the result of her own bitter experiences, and had not hesitated to publish to the world.

One of the very natural misconceptions of a layman is that the climates of the whole tropical zone are in all respects alike. This is by no means the case. There are, in reality, three logical subdivisions of that zone: the equatorial belt, the trade wind belts, and the monsoon belts. In each of these there are modifications due to oceanic and to continental influences. Further, the effect of altitude is so important that another subdivision should be added to include mountain climates. All parts of the hot zone are not equally disagreeable or hostile, so far as occupation by the white race is concerned.

The tropical zone includes extended deserts over the continental areas in the latitudes of the trade winds; immense expanses of damp forests and jungles and swamp-land in the vicinity of the equator; fertile islands, refreshed by cool steady winds from the ocean; great grass-lands with one season of drought and dust and another season of dampness, of rains, and often of floods; the monsoon districts, with their climatic control alternately that of the wet monsoon and of the dry monsoon; the mountains and plateaus with their lower temperatures and, if rising high enough, carrying snow the year around, even on the equator. This variety of climates makes it difficult to arrive at general conclusions for the lower latitudes as a whole. Each type of climate has advantages and each has disadvantages for the white settler. The deserts are free from many tropical diseases, their parched soil and dry, sterile air being unfavorable to the development and distribution of most micro-organisms and of disease-bearing insects. Further, the general physiological effects of desert climates are stimulating. They do not have the weakening and enervating effects associated with the hot-house air of the latitudes nearer the equator. The drier districts are, on the whole, to be preferred to the moister. On the other hand, the dust and heat and brilliant sunshine are very trying, and the lack of water is obviously a serious limitation to settlement and agricultural development. Tropical deserts are "healthy" in the ordinary meaning of the term, but they are not desirable places of residence for white settlers.

Tropical islands in the trade winds, especially those towards the margins of the tropical zone, like the Hawaiian Islands, are generally regarded as far more desirable places of residence for white men and women than are the continental areas, especially those near the equator. Trade wind islands are still more desirable if they are mountainous, and therefore offer the advantages of tempered heat.

Wherever mountains and plateaus occur in the tropics there is general agreement that the climatic conditions, at least up to a height of a few thousand feet, are more favorable for the white settler than are the hotter, damp lowlands. Altitude is chiefly important because of its effect in tempering the heat, especially at night. In India the hill sections are crowded during the hot months by civilian and military officials, and it has been well said that India is ruled from 7,000 feet above sea level. The climate of many tropical plateaus and mountains has the reputation of being a "perpetual spring". Thus, on the interior plateaus of the tropical Cordilleras of South America and on the eastern plateaus of Africa the heat is greatly tempered by the

altitude, while the lowlands and coasts are very hot. A list of the better portions of the tropics for white settlement always includes the plateaus of the Andes, of eastern equatorial Africa, and of South Africa; the Indian hill stations, and the Hawaiian and other trade wind islands. To this list, many other places might easily be added. Lord Bryce believed that Rhodesia will become the home of a settled British population, where the race will renew itself from generation to generation, but the climate of this elevated region is very different from that of the hot and moist latitudes along the equator. Yet tropical mountains and plateaus lack one feature of essential importance. They may, perhaps rightly, be said to have a "perpetual spring", but they lack distinct seasonal variety. They lack the tonic of a cold winter. Their temperatures are, it is true, lower than those nearer sea level, but although the temperature scale is lower, the same monotonous succession of notes is played upon it. They are temperate in the sense of having tempered heat. They are not "temperate" in the sense that they have temperate zone characteristics of distinct seasonal variety; of constantly fluctuating weather changes; of the alternation from warmer to colder winds, and from storm to fine weather. Tropical mountains and plateaus have monotony; a monotonous repetition of the same weather. That is the secret of their failure in solving the problem of acclimatization. They do offer immunity from certain tropical diseases. They fail to provide the "spur of the seasons" to which we are accustomed in temperate latitudes. The non-seasonal character of tropical climates —the so-called "perpetual spring"—is not by any means the best fitted for man's mental or physical development, however pleasant it may be for a time. Many tropical hill and plateau stations are beneficial in restoring those exhausted by overwork or by the heat of the lowlands. They are especially advantageous in the cases of white women and children. Nevertheless, climates temperate because of altitude cannot replace climates "temperate" because of latitude.

In the problems of acclimatization and colonization in the tropics our concern is chiefly, although not by any means solely, with the hot, damp and rainy climates found generally in the latitudes near the equator: the climates of the Amazon and Congo forests, for example; of the west coast of Africa and of northern South America; of the typical tropical jungles: of the steamy oppressive "hot-house" type. It is in these more or less constantly wet climates that we find the wealth of tropical products which chiefly attracts the white man. It is here that, on the whole, there are the greatest possibilities for future food supply. The economic return is mainly from the damp lowlands, and not from the deserts or from the high plateaus and mountains. It is fairly safe to say that it is specifically the rainy low-latitude type of climate which promises the greatest potential agricultural resources, and also presents the most serious handicap to white settlement. It is with this climate that the problem of acclimatization is mainly concerned.

In the minds of most people the acclimatization problem is merely a question of whether a single white man or woman can live for a time in a tropical climate in reasonable comfort and with a fair chance of good health. But the question is a far larger one than that. It concerns not one individual alone, nor even one generation alone. The real problem is this: can men and women of the white race immigrate in large numbers to the moist hot tropics and live there on the same high plane of civilization as that characteristic of their former homes, retaining their physical health and vitality, their mental and moral standards, and reproducing their own kind? Further, can future generations of white people, born in the tropics, maintain, in the years to come, these same standards of civilization and of physical, mental and moral vigor? This, it will be observed, is a very much larger, more complex and more fundamental question, but it is the real crux of the whole matter. And this much larger question is, at present, very difficult, if not altogether impossible, to answer on the basis of known scientific facts.

The health relation of the white race in tropical climates is best considered from two points of view, first, the general one of tropical diseases, and second, the one that concerns the effects of physiological disturbances without always, or necessarily, involving specific disease.

It is not for the layman, without professional knowledge of medical science, to attempt any technical discussion of tropical diseases. He may, however, consider some of the obvious facts without committing himself in regard to details which do not properly fall in his own field of scientific study.

Certain diseases are so much at home in the tropics that they have come to be known as tropical diseases. This designation does not imply that some of them may not, and do not, occur in extra-tropical latitudes when conditions of climate, traffic, unsanitary mode of life, absence of proper medical supervision, and so on, favor such occurrence. There is greater variety in tropical than in extra-tropical disease, but then, many diseases common in cooler latitudes prevail also near the equator, and many are found in low latitudes which have been practically or altogether banished from higher latitudes. Again, certain diseases even in the tropics, as is well known, e. g., in the case of yellow fever, have been hemmed in more and more by modern sanitary measures. Several conditions are at work in favoring the wide-

spread prevalence and in determining the large number of tropical diseases. Among these three may here be mentioned: the agency of tropical insects and parasites in propagating or in transmitting the disease germ; the general weakening effect of the steady, damp heat upon the human body, and the excessively unhygienic modes of life of the natives. The tropical climate is not the sole, or even in many cases the determining factor, yet certain high temperatures are necessary for the occurrence and spread of malaria and yellow fever, for example, and the agency of the tropical fauna, whose requirements are the presence of known conditions of heat and of moisture, is of fundamental importance in many cases. As the late Sir Patrick Manson pointed out, many years ago, in his famous work on tropical diseases, the term "tropical diseases" does not mean diseases confined to the tropics. It was employed by him in a meteorological sense for diseases associated with, but not solely or even directly due to high temperatures. Tropical climatic conditions, *per se*, it may be noted in passing, probably do not injuriously affect the natives of the tropics any more than do the conditions of extra-tropical climates affect us who live in them. Most tropical diseases attack both natives and whites; sometimes the former suffer most; sometimes the latter. There is no rigid hard-and-fast rule. The racial element is, however, often potent. Finally, great numbers of tropical natives have inevitably, in the long succession of generations, become more or less immune to the attacks of disease against which the whites have not yet developed immunity.

Leaving these broad generalizations, let us turn next to a brief consideration of a few of the more important tropical diseases. In addition to the more or less direct effects of exposure to tropical sunshine, dampness and heat, such as sunstroke, heat exhaustion and the like, there are malaria, and dysentery in various forms, doubtless the two worst enemies of white residents in the tropics; sleeping sickness; tropical abscess of the liver; hookworm and other intestinal parasitical infectious fevers of different kinds; ulcers and other infections of the skin; many infectious diseases common to colder as well as warmer latitudes, and other ailments that chiefly attack the natives, and are therefore of a medical rather than of a practical interest in our present consideration. Yellow fever, cholera and plague are very greatly limited, and are being more and more successfully overcome as the result of modern sanitary measures.

Twenty years ago Sir Ronald Ross wrote of malaria, "I venture to say that it has profoundly modified the history of mankind by doing more than anything else to hamper the work of civilization in the tropics." During the two decades that have elapsed since that statement was made, the campaign against malaria has accomplished remarkable results, both in prevention and in treatment; yet it is safe to say that malaria still remains one of the most destructive diseases in the world. Rough estimates—the only ones that are possible at present—indicate that about one-third of the population throughout the tropics suffers from it constantly. The malarial zone is a broad band within the moist tropics, extending at times into the margins of the adjoining temperate zones. The disease is absent, or infrequent, in deserts and steppes, and on mountains at moderate elevations above sea-level. It is perennial in its zone of maximum frequency, but has a general tendency to rise to a peak in the warmer or rainy season. Even in the early days of medical investigation into the origin and conditions of malarial infection, a close relation between temperature and the occurrence of malaria was observed, so distinct that from then on the line of a mean annual temperature of 60° F. has been considered as marking the polar boundaries of recognized malarial infection, and winter cold has been seen to be the great barrier against the occurrence and spread of the disease. Rainfall is important because the malaria-bearing mosquito passes one stage of its life in water. Hence lakes, and especially marshes, pools and swamps are critical as breeding places of the mosquitoes. Digging up the soil results in hollows where puddles and pools may collect. In early days, it was believed that stirring up the soil gave rise to certain noxious exhalations from the ground, and that these vapors or gases produced the disease. It is easy to see how that belief originated, and why it persisted until medical science wholly disproved it.

Tropical dysentery "slays outright, and makes miserable wrecks of white men in the tropics", as a recent writer has put it, doubtless without exaggeration. Dysentery has its real home in tropical climates, and increases in severity and in frequency with approach to the equator. Some form of it is always present in low latitudes, and it is there next in importance to malaria in causing high death-rates, and in its lasting effects. In contrast with the case of malaria and of yellow fever, altitude cannot be relied on to give relief. Residents on mountains sometimes suffer more than do those at lower levels.

The species of tsetse fly associated with sleeping sickness requires a warm, damp atmosphere, and the immediate presence of water. The limit of its altitudinal range is about 4000 to 5000 feet. It is found in the true equatorial forests where there is water, and also extends into the adjacent grasslands where there are groups of trees. Sleeping sickness occurs over a vast area in tropical and sub-tropical Africa. There it causes high mortality, a decreased birth-rate, and is a serious menace to the existence of a large population. In consequence of its ravages, the labor-supply is being diminished, and the

economic development of the country is being retarded.

Because of its inevitable enervating and enfeebling effects, hookworm is another tropical and sub-tropical disease which is a very serious menace in many places. The economic loss is very heavy, perhaps even heavier than that caused by malaria. It has been estimated that between 60% and 80% of the population of India harbor the parasite.

Yellow fever, formerly widely prevalent along the tropical shores of Latin America, and occasionally even invading our Gulf coasts, now has its last stronghold in western equatorial Africa, where such splendid work, unfortunately accompanied by the loss of valuable lives, has been carried on for some years by the Rockefeller Institute for Medical Research. An outbreak of yellow fever in Brazil during the summer of 1928 showed that South America is not yet safe from this disease. Definite temperature controls over the occurrence of yellow fever have long been known, and stated in specific numbers of degrees of the thermometer scale, and the disappearance of epidemics when the freezing point is reached was noted several decades ago.

Sunstroke and heat prostration, as is to be expected, are most common in the tropics. Exposure to the sun does not always explain sunstroke, for at sea the tropical sun is much less fatal than on land, and places with apparently similar conditions of sunshine differ much as regards prevalence of sunstroke. The story is told of a planter from Barbados who had gone to live in Madras, and who insisted on riding horseback in the sun as he had been accustomed to do in Barbados. He laughed at friends who warned him against running this risk, and lost his life by sunstroke. At Panama there were only two deaths from sunstroke and 21 cases of heat exhaustion in a population of 120,000, in 13 years. In Liberia, on the other hand, it has been pointed out by Dr. C. F. Brooks that in climatic conditions on the coastal lowlands much like those of the Atlantic coast of Panama, manual labor such as is performed by white men in Panama is impossible, and only a few minutes' exposure is enough to give "a touch of the sun". It has been suggested that an explanation may perhaps be found in the fact that in Panama protection against the sun is provided by a moist layer of air which extends to great heights, while in Liberia the moist layer is relatively thin. Very damp air, combined with strong sunshine, induces heat exhaustion at fairly moderate temperatures, and most damp lowlands in the tropics are dangerous for white men who are doing manual labor, or who have their heads unprotected. Apparently, either intense sunshine alone, or very damp air alone, is not dangerous. It is the combination of the two that brings fatal results. On the wharves of Calcutta there used to be painted, in large white letters, the significant warning, "Beware of the sun", so that persons coming there for the first time from the British Isles would read those words before they set foot on shore. "Beware of the sun" is a good rule for the tropics. There is, in general, too much sunshine in the tropics. The skin of white persons exposed to the sun there often becomes badly burned and blistered, and travellers commonly suffer because of lack of protection of neck and limbs under the hot tropical sun.

The second aspect of the health and acclimatization of the white race in the tropics concerns the physiological disturbances. While the separation of the effects of physiological disturbances from specific diseases is difficult, and may, from a strictly medical point of view, even be impossible, nevertheless there is a line of demarcation between the two, however faint it may be, and however difficult it may be to draw.

The uniformly high temperatures of the tropics—the well-known tropical monotony of heat—when combined with high humidity and the characteristically small variability of temperature from day to day, have certain already fairly well recognized physiological effects, although definite numerical measurements are still to a large extent not yet available, and much of the evidence is conflicting. On the basis of recent studies, the body temperature seems, in general, to be essentially the same as elsewhere when the body is at rest, but with exercise it rises more rapidly than in cooler climates, and also falls more slowly. Much exercise has the same effect as a mild fever. The respiration rate is high, probably because of the body's attempt to increase evaporation and so to reduce its temperature. There is evidence to indicate that evaporation from lungs and skin is far more concerned in controlling the body temperature than is chemical activity. The blood pressure apparently shows no permanent change, but there seem to be greater temporary variations after exercise than is the case in temperate climates. As regards the composition of the blood, there is a slight relative decrease in the number of red corpuscles, but the specific gravity shows no change except in disease. It appears that the popular belief in a "thinness of the blood" after prolonged residence in the tropics is unfounded, except, as just stated, in the case of disease or of anemia. Perspiration is profuse. There is, in general, an increased activity of the liver, kidneys, and spleen, as contrasted with an increased activity of the organs of respiration in higher latitudes. It would seem that when the white man goes to live in the tropics his first functional disturbances are likely to be in the intestinal organs, and may predispose to dysentery or other dangerous diseases. *Per contra*, when human beings or animals are brought from the tropics to higher latitudes, where there are lower temperatures and greater variability of weather, the troubles which they experience are mostly pul-

monary. It appears that, on the whole, the *measurable* physiological disturbances are not very significant, in so far, at least, as our present data go. There are, however, non-measurable nervous effects which may be much more critical and fundamental in the problem of acclimatization. Dr. B. C. Crowell, in an address before the American Philosophical Society, four years ago (1925), said, in speaking of the effects of tropical climates upon white men, "Science has not been able to measure the unquestionably harmful influence on the nervous system of a constant temperature, bright sunshine, brilliant colors, and the absence of seasonal variations".

The strain of residence in tropical climates seems to react distinctly unfavorably upon the nervous system of the majority of persons from colder climates, and, in the opinion of many medical authorities, it is just here that the greatest obstacle in the way of white colonization may be found. The muggy, oppressive "hothouse" air is not only uncomfortable and difficult to endure, but it has a distinctly enervating effect, which is more or less widespread among all white residents in the tropics, and especially among women and children. Energetic physical and mental action are difficult, even impossible. "A depression of bodily and mental activity follows,—enervation, indifference, disinclination to exertion, a general, ill-defined condition of debility." There is lessened power to do work, greater fatigue from work, lowered vitality. Dr. James Horton, an English physician, who was for some time stationed on the west coast of tropical Africa, reported that every continued mental effort in that climate was almost immediately accompanied by extreme fatigue and headache. While in England he could be actively at work fifteen hours a day, he found that immediately on his return to the tropics six hours was his extreme limit of continued activity and intellectual effort if he wished to avoid serious mental fatigue. An anaemic condition is widespread in the moist tropics. All this renders the body less able to resist disease. It is already weakened, and then the micro-organism of some specific disease finds a fertile field for its ravages. The individual has largely lost his powers of resistance.

The monotony of tropical heat, together with a high degree of humidity, may produce the condition of neurasthenia so widespread among the white population of the tropics, "a complex of symptoms produced by nerve exhaustion and often associated with, if not causing, an alteration in bodily nutrition". "It is this terrible nerve exhaustion", writes Dr. Havelock Charles, president of the Medical Board of India, "which has, in the past, been the most important factor in preventing the northern races from settling and procreating their line with a full share of the nerve vigor which the parental stock possessed." Tropical neurasthenia is not directly fatal, but it tends to create an emotional state of depression and to undermine a vigorous and healthy constitution. It prevents the development and maintenance of the *mens sana in corpore sano.*

The problem of acclimatization is not a question of climate alone. It is tremendously complicated by the controls exercised by race, diet, occupations, habits of life, and the like. The Chinese, for example, succeed where other people have failed. Indeed, so well do they thrive that there may, in the distant future, be more in "the Yellow Peril" than most people are willing to believe. The southern European is more successful than the northern European; the Latin than the Anglo-Saxon. Those whose diet is light and simple fare better than those who are hearty eaters and much of whose food is meat. Excessive indulgence in strong alcoholic beverages is always injurious and dangerous. The Englishman who indulges freely in his brandy and soda in the hot tropics is likely sooner to fall a victim to disease than is the Italian who drinks only light wines. Indoor occupations which keep people out of the sun are far more favorable than labor outdoors. Shopkeepers and clerks have, other things being equal, a better chance of keeping fit and well than do white policemen, or soldiers, or railway employes. Life in the tropics, away from home associations and traditions and standards, is extremely likely to lead to the excessive use of intoxicating liquor, to lowered moral tone, to sexual indulgence, to a distaste for and avoidance of reasonable physical exercise; to an incorrect and poorly-balanced diet. These, and other conditions, combine to make a normal, healthy life very difficult for most men from northern latitudes whose business takes them to the tropics, and keeps them there for any considerable length of time. It is, of course, true that most of these handicaps to sane and healthy living can be overcome, but to overcome them takes more strength of will and moral backbone than many persons possess, and they remain as contributory controls in the general question of acclimatization. Dr. B. C. Crowell has pointed out that "the equilibrium of the white man's nervous system and his energy and initiative are disturbed by contact with impassive and at times stupid colored natives, by the tendency to the abuse of stimulants, and by the general lowering of the moral tone".

There is another factor in this great complex which one of my European colleagues has aptly termed "the climate of loneliness". It is psychological in its nature. It is found in every part of the world. The more socially-inclined any individual is, the more significant is the rôle of "the climate of loneliness" in his case. It must not be lost sight of. It must not be confused with the ordinary climatic factors. It should be given weight—and sometimes tragically significant weight—as a contributing element in any discussion of the problem of

acclimatization. How often has "the climate of loneliness" been the fundamental cause of the wreck—physical, mental and moral—of the lives of young men and young women, whose breaking down, whose ill-health, and even whose deaths, were attributed to the tropical climate alone! "The climate of loneliness" is hard enough to bear at its best, in the climates to which one is accustomed at home. But it is in the deadening monotony of the steaming tropics, far from home, that the real suffering which is caused by "the climate of loneliness" is experienced.

As compared with the death-rates in colder latitudes, tropical statistics of mortality average high. These death-rates, however, represent such very diverse conditions of season, climate, race, occupation, soil, mode of life, food, dwellings, etc., that they cannot properly be compared with one another. The prevalence of some special disease in exceptionally virulent or widespread development will raise the death-rate of any one year far beyond its normal figure. Again, the presence of some plant disease or pest which causes loss of crops, and the resulting lowered vitality of the people in consequence of insufficient food, may easily swell the death-rate. Nowhere can these tropical death-rates properly be compared with those noted under different conditions in other latitudes. Most of the reliable statistics of mortality relating to white men in the tropics are for soldiers, that is, men, in the prime of life, subjected to rigid discipline; provided, when possible, with carefully selected food, proper living quarters, and adequate medical and sanitary supervision. Obviously, death-rates for white soldiers in the tropics are not directly comparable with the death-rates in our own country, which include all ages, both sexes, and very diverse living conditions, as well as deaths by accident and old age. So various and so complex are the controlling factors that critical comparative study is not worth while. Some years ago I was asked to present a paper on tropical death-rates before a scientific body, but I declined the invitation on the ground that such a discussion was really not a profitable one.

Tropical death-rates are certainly high, but this fact should not be attributed solely to the dangers of the climate. Bad sanitary conditions and lack of medical attendance account for many, if not most, of the high mortality rates among the natives; and an irrational mode of life explains many deaths among persons coming from cooler climates. Tropical death-rates have been, and are being, reduced with remarkable rapidity in all countries which are wholly or partly under white control, and especially among white troops in the tropics. This is the result of experience with tropical conditions, and of the increased precautions that are now taken in selecting and caring for the men.

The death-rates among white people in the tropics range from the appalling figure of 483 per thousand among European troops on the Gold Coast of Africa in 1829-1836—almost every other man died—down through steadily lower figures until we come to a rate as low as 5 per thousand for the British troops in India in recent years. A few illustrations of the change may be given. A death-rate of 115 in French Cochin China in the 1860's had been reduced to about 20 per thousand in the later 1870's and early 1880's. Among Dutch white soldiers in Java the rate of 170 in the second and third decades of the nineteenth century had been lowered to less than 20 in the last decade. Very striking, also, has been a phenomenal reduction in the death-rate from dysentery among the Dutch troops in Java, from 13 per thousand in the 1870's to less than 1 per thousand in the 1880's, a decrease attributed to the avoidance of contaminated water as the result of the use of artesian wells.

The mortality rate of the British Army in India has fallen from over 80 per thousand in the early decades of the 19th century, successively, in later periods, to under 60, under 20, under 10, and even to 5 in the most recent years. In Ceylon, reckoned as one of the most unhealthy stations, the rate was over 110 and is now about 7. In western equatorial Africa, formerly known as "the white man's grave", the terrible figure of earlier years has fallen to a fraction of the former rate. Such statistics are clear proofs of the notable triumphs of medical science and of military organization. In many former wars, for one victim claimed by a bullet, an arrow, or a spear, four or five victims, even perhaps nine or ten, were claimed by disease. The records of the Crimean War and of the Boer War furnish striking evidence of this fact. Our own record in the war with Spain was not one to be proud of. Encouraging as is this remarkable reduction in tropical death-rates, it should be observed that, as the *Indian Medical Record* pointed out some years ago, "The lowered death rate in hot countries is not evidence in favor of acclimatization, but, on the contrary, it shows that this low rate is only reached after the taking of most elaborate precautions. It is rather a proof of the inability of the white race to colonize in the tropics, i.e., to labor and undergo exposure there. It is absurd to say that a reduced death rate, directly due to the careful avoidance of every possible exposure, is an evidence that such exposure can be endured." Furthermore, it is but natural that large numbers of white soldiers, and of civilians also, are if possible invalided home to cooler climates as soon as it is discovered that recovery will be slow, or difficult, in the tropics. It thus results that many invalids, in cases where they do not recover, have died on the voyage back, or at home, and their deaths do not figure in the tropical death-rates. I have seen statistics, authority for which I am unable to give, that in a fairly recent year the death-rate among a certain group of European troops

invalided home, or discharged, was over 50 per thousand.

In general, as I see it, no statistics of tropical mortality can be a true index of health conditions there for the reason that many tropical diseases, not necessarily or highly fatal, leave their victims in a weakened and debilitated condition. In addition to those who die of disease, there are many who become wrecks of their former selves and are unable to carry on. The economic loss resulting from this condition is necessarily a very great handicap.

In considering tropical diseases in relation to acclimatization, the thought inevitably arises in one's mind whether, with the eventual elimination and eradication of the major tropical diseases, the problem of acclimatization will not be solved. No one can read of the wonderful progress that has been made in the fight against yellow fever, malaria, hookworm and dysentery, without looking to the future with high hope of a continuing and eventually a complete conquest. The work of Gen. Gorgas at Panama, in reducing the death-rates from 40 per thousand to 7.5, a year or so later, is certainly an object-lesson in successful prophylaxis. It is one of many "monuments of victory", as these splendid achievements in the war on tropical disease, in Panama, in Cuba, in the Philippines, and elsewhere, have well been called. It has been estimated that in the Malay States, over 30,000 lives were saved by the introduction of an adequate drainage system. Fifty years ago the death-rate in Jamaica averaged over 50 per thousand. It has now been reduced to nearly that in our own cities. A brilliant group of medical men—heroes, all of them, and several of them martyrs to medical science—has accomplished almost incredible results. The areas ravaged by some diseases have been limited. "Quinine, kerosene and mosquito netting" have accomplished wonders. The future certainly looks bright. Many diseases associated, directly or indirectly, with tropical heat and moisture can now be effectively guarded against by the intelligent and persistent observance of simple rules of living. Medical science already knows, fully or partially, the best methods of controlling and preventing such diseases as plague, cholera, yellow fever, typhus, malaria, sleeping sickness. As a recent medical writer has put it, the question of how far to apply this knowledge, in a practical way, is now very largely one of expense and of incentive.

In this discussion certain facts seem to stand out in the mind of a layman. Tropical diseases are still, and will for generations remain, a very serious handicap to white settlement of the tropics. Medical men will doubtless be the first to agree that a great deal of slow, patient scientific research must still be accomplished before the fight against the widely-extended strongholds of many tropical diseases can be successfully carried through. Sanitary campaigns, on a vast scale, must be undertaken. These are immensely expensive, perhaps for generations to come prohibitively expensive. And they may also be very difficult because of the ignorance and opposition of the natives. To quote, "Those who are not actively engaged in the war against tropical disease are not given to exuberant optimism concerning the outlook, but are preparing for a conquest 'which must be sustained with method and tenacity' for years to come". The brilliant work accomplished in Cuba, in Panama and elsewhere, in the fight against yellow fever, involved a very large expenditure of money. The area was limited. There was strong military or civilian compulsory authority behind it. If one looks at the extent of the wet tropics on any map of the world's climates, the impossibility of carrying through any such campaign over the whole of that vast area will be obvious at one glance. Yet, in spite of all these difficulties, the advance that has been made within the last few decades inevitably leads us to hope that eventually life may be as safe from disease in the inner tropics as it is in our own home climates.

In view of the large number of factors involved in the problem of acclimatization, and of the very incomplete state of our knowledge on the subject, it is not surprising that the opinions of writers differ very markedly from one another. There is, on the one hand, the group which takes a distinctly pessimistic view, and sees practically no hope whatever. Those who belong in this group are mostly men who expressed their opinions many years ago, before the days of the modern study of tropical medicine and of tropical sanitation. In the second category we find those who believe that acclimatization is merely a question of overcoming disease; who look forward to a rapid elimination of all tropical diseases, and who do not regard the effects of the physiological disturbances of any special significance. Writers of a third group fully recognize the progress made in the warfare on tropical disease but do not, even in their most optimistic moments, see the disappearance of tropical diseases which are such a tremendous handicap to white settlement in the tropics. They believe that, entirely apart from the presence or absence of disease, hot, damp tropical climates have a deleterious influence upon white men, especially upon white women and children, which operates and will operate as an apparently insuperable obstacle to the complete acclimatization of our race in the tropics.

It will help to understand the views of these three groups of writers if we quote briefly. Alfred Russell Wallace held the view that true acclimatization is impossible. "An Englishman", he said, "who can only live in Rome by sleeping in a tower and never venturing forth at night cannot be said to be truly acclimated". The older generation will easily remember the days when cautious travellers in Italy never ac-

cepted a room on the ground floor of a hotel, and always came in before sunset. Those were, of course, the days when malaria was rampant on the Roman campagna, and experience had shown that what was called "Roman fever" was "caught" oftenest by those who were out in the evening, and who had rooms near the ground. The correct explanation is, of course, to be found in the fact that the malaria-bearing mosquito is nocturnal in its habits, and usually does not fly far above the ground. Those were the days when life on the equatorial west coast of Africa was a very dangerous and uncertain business. The doggerel, "the Bight of Benin, and few come out that ever go in", was a common way of expressing the serious risk of landing in the Bight of Benin, the body of water off the Slave Coast of Africa. It was a popular saying at that time that every British colony on the west coast of Africa had three Governors, one on his way out on a steamer to assume his post of duty, one still carrying on the government of the colony, and the third on his way home in the handsomely appointed coffin which the Government had provided for him. In "The Control of the Tropics", published in 1898, Benjamin Kidd wrote: "The tropics . . . can only be governed as a trust for civilization, and with a full sense of the responsibility which such a trust involves. The first principle of success in undertaking such a duty seems to the writer to be a clear recognition of the cardinal fact that in the tropics the white man lives and works only as a diver lives and works under water. Alike in a moral, in an ethical, and in a political sense, the atmosphere he breathes must be that of another region; that which produced him and to which he belongs. Neither physically, morally, nor politically, can he be acclimatized in the tropics." Kipling put much the same idea into verse:

> "And the end of the fight is a tombstone white
> With the name of the late deceased,
> And the epitaph clear, 'A fool lieth here
> Who tried to hustle the East.'"

Of India, Meredith Townsend in his book, "Asia and Europe", made the following significant statement: "Not only is there no white race in India; not only is there no white colony, but there is no white man who proposes to remain. No ruler stays there to help, or criticize, or moderate, his successor. No successful white soldier founds a family. No white man who makes a fortune builds a house or buys an estate for his descendants. The very planter, the very engine-driver, the very foreman of works, departs before he is sixty, leaving no child, or house, or trace of himself. No white man takes root in India."

There is a practically universal conviction on the part of white residents in the tropics that they need to renew their strength and vigor by going back to their home climates at frequent intervals, unless they wish to wear themselves out, and some day succumb as hopeless wrecks. For white children, especially, a long residence in the tropics is highly undesirable. One competent authority says: "As a matter of fact there is a constant stream of invalids sent home from all tropical climates, and omitting a few dissenters, there is a generally accepted opinion that two years is the longest period it is safe to remain in hot places without a more or less prolonged vacation in a cold country". A surgeon who had long experience in the tropics says that the limit of endurance of an equatorial climate, even on an island, and for a strong man, is seven years. An American Army medical officer has stated that the most energetic and stalwart Americans after a year of service in the Philippines lose energy, strength, and ambition. I have a copy of a letter written by an English Judge who had long been a resident of Ceylon, in which he emphasizes the tragedy of sending the children back to England. He writes, "Surely for us there is no climate like our own. And when all is said, in a tropical climate, even of the best, we live as it were on sufferance, and the climate tells on the next generation. For every one of us who has his livelihood in Ceylon, there comes the inevitable day when he must part from his children and send them home. This stern necessity has been styled a price which we pay for our Eastern possessions—and a heavy price it is."

The second group of writers says, in brief, "The conquest of the tropics is not yet an accomplished fact, but enough has been done to show that most or all of the disabilities of the climate can be overcome. The tropics are not unhealthy because of any effects of the climate, but because of the diseases peculiar to the tropics. Many of these are now preventable; the others will soon be so. With their disappearance, the countries formerly thought deadly for white men and women have actually come to be almost salubrious. Most, if not all, of the difficulties are due to such factors as intemperance, improper food, sexual indulgence, the proximity of inferior races, and the like. These are handicaps, but they can be overcome. They are secondary and indirect climatic effects, and will disappear. The acclimatization problem is rapidly nearing its natural solution."

Such optimism seems, to me at least, beyond the bounds of reason. That the elimination of some tropical diseases has made a tremendous change for the better in certain parts of the tropics no one will deny, but that effects of the physiological disturbances remain, and the happy future foreseen by these enthusiasts is not yet in sight, is equally true.

The views of the third group are intermediate between those of the first two categories. There is, in the minds of most writers on acclimatization, the conviction that even if all tropical diseases could conceivably be eliminated from

the picture, there would still remain those insidious physiological effects of the tropical sun, the heat and the humidity already referred to; the general physical, mental and moral deterioration; the neurasthenia; the inability to maintain full bodily and mental vigor. In the present stage of our knowledge, true acclimatization is considered impossible, and while, with proper precautions, individual white men can live in the tropics, the race cannot persist. This thought, Dr. Andrew Balfour, Director of the London School of Hygiene and Tropical Medicine, has recently stated as follows: "So far as the race is concerned, I am persuaded that the hot and humid tropics are not suited to white colonization and never will be with our present knowledge, even if they were rendered as free from disease as England." The same idea was expressed by Dr. John C. Phillips, in an article in the *Harvard Alumni Bulletin*, three years ago: "I doubt whether the white man can ever escape the ultimate effect of the tropics (particularly the mental effect) merely by living at high altitudes. He may well escape all tropical diseases, but there are subtle deteriorating influences that will finally come upon him unless there are regular and extended visits to the homeland." Some few years ago I wrote to the editor of one of the leading English medical journals, the *Lancet*, asking him to state briefly what he believed to be the views of the medical profession in his country on the question of acclimatization in view of the long experience of British soldiers and civilians in tropical countries, especially in India. It should be remembered that much of India and of other monsoon areas, especially during the rains, has conditions of heat, moisture and rainfall very similar to those of the low latitudes near the equator. The answer to my request was an excellent editorial in two successive issues of the *Lancet*, giving considerable detail, and summarizing the conclusions briefly in the following statement: "That residence in hot climates under the circumstances of ordinary life has an adverse effect upon Europeans cannot, we think, be doubted. Some constitutions seem to be altogether unfitted for these climates, and such individuals lose their health and physical energy from the moment of their arrival. A still larger number do so sooner or later under a more protracted residence, even if they escape being attacked by one or the other of the endemic or epidemic diseases incidental to such climates. Residence in tropical and sub-tropical countries usually produces a very appreciable effect, not only on the complexion but on the constitution, and notably so during childhood and youth."

Such quotations might be extended almost indefinitely, but those that I have given are representative. It is obvious that there are real differences of opinion as to the effects of tropical climates. The truth lies somewhere between the extremes; between the older pessimistic and the newer optimistic views. The tropics are not as hopelessly unhealthy as they have been painted. On the other hand, they are not, for the large majority of non-natives, a desirable place of residence. To sum up this highly complex matter: White residents from cooler latitudes on coming into the tropics must adjust themselves physiologically to the new climates. During this adjustment there is more or less strain on various organs and functions of the body. The strain may be too severe: then the individual suffers. The adjustment is usually greatly retarded and hindered by a persistence in habits of food, drink and general mode of life which, however well suited to the home climate, do not fit tropical conditions. During the adjustment, especially if complicated by irrational habits, the body is naturally abnormally sensitive to the new diseases to which it is exposed. Even should no specific diseases be contracted, there are anaemic and neurasthenic tendencies and other degenerative changes. Experience teaches that white men cannot with impunity do hard manual labor under a tropical sun, but that they may enjoy fairly good health as overseers, or at indoor work, if they take reasonable precaution. Acclimatization in the full sense of having white men and women living for successive generations in the tropics, and reproducing their kind without physical, mental, and moral degeneration—i.e., colonization in the true sense—is impossible. Tropical disease and death-rates, as has been abundantly shown, can be much reduced by proper attention to sanitary laws, so that these rates may become not much, if any, higher than those in the extra-tropics. And with increasing medical knowledge of the nature and prevention of tropical diseases, as well as by means of modern sanitary methods, a white resident in the tropics will constantly become better able to withstand disease. It cannot truthfully be said that scientific investigation has shown that climate is an *insuperable* obstacle to the white man's residence in the tropics. Further investigation is, however, very greatly needed. As Sir Patrick Manson expressed it, acclimatization is less "an unconscious adaptation of the physiology of the individual" than "an intelligent adaptation of his habits". For greater comfort, for better health, and for greater success, properly selected hill stations will, however, always be essential to northerners who have to live in the tropics, especially to white women and children.

It has been said, I believe by General Wolseley, that the white soldier in the tropics is "always in campaign, if not against the enemy, at least against the climate". This sentence may be made to fit the case of the white civilian by changing it to read: The white race in the tropics is always in campaign against its enemy, the climate.

What of the future? There will be a slow and limited settlement of the most favorable portions of the tropics by non-natives, who will construct houses suited to the conditions: large, well-ventilated and artificially cooled, and well exposed to free-moving air. Electrical appliances of all sorts, for cooking, for refrigeration, for ventilation, will prove a tremendous boon to those whose lot is, in the future, cast in hot tropical climates. Proper clothing, modern sanitary measures, good hygiene—all will prove increasingly important. There is no doubt that civilized man can cope with tropical conditions and problems far more successfully than can the native. The white man can live there, but he needs intelligence and a rigid discipline in order to do so successfully. His mode of life must conform to the climate. He should not expect that his internal physiological adjustments will make him independent of his environment. "Toleration of climate is one thing; independence of it is quite another." Life in the tropics will, in the future, certainly become more comfortable as well as safer for the white race, but in the light of our present knowledge, acclimatization, in its full and literal sense, is and will remain impossible.

HIGH BLOOD PRESSURE

In a recent statement issued by the U. S. Public Health Service, considerable encouragement is given to persons having a high blood pressure if they will adopt proper treatment, which consists principally of a proper regimen. Any individual so afflicted who takes reasonable care of himself under the direction of his physician may usually expect many years of comfortable existence. And the importance of treatment is emphasized by the fact that the complications and conditions associated with high blood pressure, grouped as a single cause of death, lead the list of causes of death in our mortality statistics.

It is pointed out that every living person has blood pressure. A certain amount of pressure is necessary in order to make the blood flow through the circulatory vessels of the body. The actual pressure depends on four physical factors: (1) the force of the heart beat; (2) the resistance caused by friction through the vessels; (3) the elasticity of the vessel walls; and (4) the amount of blood.

An average blood pressure has been established by thousands of examinations made on normal persons. This average pressure varies according to age. However, perfectly healthy individuals may deviate from this average. It also shows marked variation in the same individual from hour to hour throughout the day. The upper limit of normal blood pressure for the average individual has been stated to be equal to his age in years plus 100.

The factors which influence blood pressure are many and varied. Exercise, excitement, and anger cause increased pressure, whereas nervous depression often causes the blood pressure to fall. Certain diseases, notably Bright's disease, various chronic infections, and chronic poisonings raise the blood pressure, while debilitating diseases, such as tuberculosis, are often associated with low blood pressure. Heredity is also a factor. Blood pressure depends partly upon the amount of elastic tissue in our arteries. Some families noted for their longevity constitute a group having especially good arteries. Other family groups are unfortunate enough to inherit and transmit poor arteries, that is, arteries which have too little elastic tissue in them. As age advances, thickening of the arteries inevitably occurs, and persons who have the best heritage in this respect have the best chances for old age. The popular statement that a man is as old as his arteries seems quite applicable.

Sometimes a certain amount of increased pressure is necessary, and in this case there is ground for optimism; but there are limits beyond which the rise may become dangerous in itself. This limit varies quite markedly with different persons, but it is generally considered that if the pressure can be kept below 200 the individual is relatively safe from dangerous developments due directly to the high blood pressure.

Treatment consists principally in a proper regimen, directed chiefly toward preventing the complications and relieving the symptoms. With the heart under increased strain, it is evident that rest constitutes the greatest protection for this organ. The amount of exercise should be decided upon by the family physician. Food is a factor in treatment; but it is now believed that a consideration of the quantity of food—a restriction in amount—rather than quality is of the greater importance. The giving of drugs is usually disappointing, but in emergencies they may be life saving.

The person with a high blood pressure should not become a "high blood pressure fiend", constantly thinking, talking, and living his high blood pressure. He should adopt a cheerful frame of mind, shun too frequently estimations of the pressure, avoid physical and mental, particularly emotional, excesses, and get plenty of rest, and he may live happily with his blood pressure to a ripe old age.

MASSACHUSETTS MEDICO-LEGAL SOCIETY

AN UNUSUAL CASE OF MATRICIDE*

BY FRED DURGIN JONES, M.D.†

I WISH to present this case of homicide because it is rather interesting from several different angles. Early on the morning of August 6, the Police Department, Springfield, Mass., had a call by neighbors to go to a home because of a tremendous amount of disturbance there. They answered the call and after a more or less superficial examination of the premises, decided that it was a false alarm and returned to headquarters; but about 7:15 A. M. they received another call from neighbors saying that this disturbance had started again and they wished them to come right down, which they did. They heard a considerable amount of noise and broke in the kitchen door; this is the picture they saw.

A woman was lying on the kitchen floor nude; her son was sitting on the kitchen floor; they were embraced in each other's arms and he was going through motions of artificial respiration. The police immediately put him under arrest and I was called. He told the police that his mother had died three times during the night but that each time he had been able to revive her and he thought probably he could again if they would allow him to try.

I got the call about 7:50 A. M. and went down at 8:20. The body was lying on the kitchen floor nude; a large amount of blood stained water was on the floor; intestines were scattered all round the floor. A superficial examination showed multiple ecchymotic spots all over the body and the eyes gouged out.

I searched for some weapon or implement that might possibly have been used, but none could be found. The house was in a very badly run-down condition and the boy's mother was said to have been acting peculiarly for a period extending back over several years. She had never been committed to an institution, but many times they thought it would have been good for her, just as a matter of observation. Things were pretty much upset and badly kept. The beds looked as though the sheets had not been changed for months and months. It was a very untidy house, showing the mental condition of perhaps both the mother and the son.

The son had been keeping company with a young lady, of recent months, and had spent a good deal of time with this girl. The mother had remonstrated; she did not want him to get married.

The autopsy presented multiple ecchymotic areas all over the body; the eyes were gouged out and there were lacerations on the cheek, produced by finger nails. There was hemorrhage in the temporal muscle and all over the brain were multiple areas of hemorrhage, not intracerebral but probably from rupture of the veins. There was a laceration of the perineum which would admit the whole arm into the abdominal cavity. The vault of the vagina was intact but there was a tear up through the rectum that would admit the whole arm. The ascending colon, stomach, part of the transverse colon, mesentery, descending colon, rectum and all of the small intestines had been torn out and scattered around the room. The autopsy showed none of the abdominal gastrointestinal tract *in situ*.

This boy was taken before the court and when charged with this crime was very calm. The judge told him he had been examined by three alienists to determine his sanity or insanity and asked him if he had anything to say to the court. He said he thought he would leave it to the court to decide his fate and smiled. He was found to be a case of dementia praecox and was sent to Bridgewater.

The boy had had a very good education, was a high school graduate and one of the leading boys in athletics in his class. He was a particularly muscular young man, but he did not have a very good shaped head—a little on the microcephalic type. He did not look well balanced in his general appearance.

His family record on the paternal side was very good. The mother had been peculiar for years and there had been times when they thought it would have been wise to place her in an institution for observation.

All this tearing of the rectum and laceration of the perineum was done with the hands; no instruments were used at all in this unusual amount of torture.

Discussion

Dr. Colt: Did the young man admit anything?

Dr. Jones: Yes. He rehearsed it over and over again just as it happened.

Dr. Colt: What reason did he give?

Dr. Jones: He said he wanted to wash his mother's sins away and that is apparently why he used so much water. He would say to his mother, "You love God?" Then he would hit her.

Dr. Magrath: Did he describe how he reduced her to helplessness?

Dr. Jones: My assumption is that he ren-

*Read before the Massachusetts Medico-Legal Society at the Warren Anatomical Museum, Harvard Medical School, February 2, 1927.

†For record and address of author see "This Week's Issue," page 648.

dered her unconscious first by blows on the head.

DR. MAGRATH: Did you see him after the affair?

DR. JONES: No.

DR. ———: How old was he?

DR. JONES: He was about 24, an American, and his father holds a responsible position. The boy had been employed by the Springfield Gas Light Co. as a clerical assistant.

DR. ———: I would like to ask what the later developments were; did he meet with any improvements?

DR. JONES: No improvements so far as I know. I do not know what the prognosis is in that type of case. I understand there are times when they have remissions.

DR. ———: What were his habits?

DR. JONES: His habits were excellent. A young lady came into my office soon after this happened and said, "I was so surprised to hear what Dick did; I regarded him as one of the finest of all the boys, that's why I chose to go to a dance with him the week before."

DR. ———: Had he shown any evidence of insanity before that?

DR. JONES: He had had just a suggestion of a change of attitude, bragging a little bit about his father. He worried a little bit because he had lost his position and had not found another. He went to his father's office one afternoon and said, "I guess I'll take a rest", and fell asleep in the office. The symptoms were not marked enough to lead anybody to believe he was going to have acute insanity.

DR. ———: Why did he lose his position?

DR. JONES: It had nothing to do with his morals; it was because, I presume, they had so many to lay off because of lack of work and he happened to be among those laid off.

DR. ———: Was he religious?

DR. JONES: Not especially so. I think he attended church, but I do not think he was particularly devout. His father and mother were not living together.

DR. ———: How long a time between the first and second disturbance?

DR. JONES: The first disturbance was about 3:30 in the morning. The second call to Police Headquarters was between 7 and 7:15.

DR. MAGRATH: What was the nature of the screams?

DR. JONES: I do not know the character of the sounds that the neighbors heard.

DR. ———: You say there were screams when the police got there the second time?

DR. JONES: No. They heard this loud talking, which was the boy talking. He had his mother embraced in his arms and was talking to her.

DR. ———: You do not know whether or not the disturbance was the loud talking of the boy?

DR. JONES: I assume that she died probably before the second call came in.

DR. MAGRATH: I am reminded by this very extraordinary account of the so-called Fritz case in Harlem, N. Y., a few years ago. I tell it briefly because of the parallel. It was about 2 in the morning when a bicycle-mounted traffic officer, riding along the Bronx Park, saw parked against the right hand curbstone a Ford touring car and a man standing on the running board, striking someone in the face, someone sitting in the front seat. He stopped and investigated. He saw that the other occupant of the car was a young woman who was in a half sitting position in the right hand side of the seat. The young man was striking her in the face. The floor of the car was blood stained. There was a lot of blood on the young man's coat sleeve. The officer asked him what he was doing. He said he was trying to bring her to. The officer got into the car and drove to the hospital and the young woman was dead on arrival. Some search was made of the premises nearby for some instrument or implement but with negligible results.

The post mortem showed considerable bruising of this young woman's face and laceration of the perineum, of the left-hand wall of the vagina, and left-hand part of the vault, the tear running through along the left-hand brim of the pelvis. It showed tearing of the meso-ileum, the transverse meso-colon and a complete rupture of the left common iliac artery. The tearing of the perineum was complete and was continued through to the right-hand rear edge of the anus. The pelvic organs were preserved.

The post mortem was made by one of Dr. Norris's Assistant Medical Examiners, and present at the post mortem was the Medical Assistant to the District Attorney from New York, Otto Schultze.

The young man, to give an account of himself, said he and this young woman were old friends, in a way, sweethearts. She was a widow. He had come down from where they both lived, had bought a Ford car and they had driven about all afternoon and evening.

On the way home, late at night, he had made a suggestion, which she declined on the ground of too much hazard on account of impending catamenia, whereupon, he said, as he drove he titillated her genitals, which was so gratifying that she urged him to do more of the same. He, therefore, pulled up the car and, making a cone of his hand, thrust it into the vagina; that is all he did, according to his story. The degree of force used, I leave to you.

He was indicted for murder in the first degree, to which, I think, he pleaded not guilty. He secured his counsel, or there was secured for him a bright young lawyer. The case, later on, came to trial. The principal witness for the defense was the Medical Assistant to the Office of District Attorney. He had been present at the autopsy and said at the time that this was a regular ripper case. He changed his mind and

testified at the trial that in his opinion the injuries described could have resulted from the procedures described by the defendant, but that they were of an exceptional nature. Another radical witness was a former Coroner's physician. I had been called into the case by the government.

The Ford car was brought into the court room and stood there with its blood stained wind-shield. The jury was not a locked up one. The trial was very much prolonged, running into three weeks. The presiding judge was one of the older justices of the New York Bench, Davis, a very learned gentleman. I did not hear his charge. The jury brought in a verdict of not guilty to the amazement of the government's forces and to the amazement of the court. Why that verdict was rendered, probably nobody shall ever know, but it turned out afterward that the defendant in this case was related to a very wealthy Jewish merchant in New York who backed the defendant.

In view of the anatomical setting of the facts, I thought it might interest you to hear about it.

DR. HUNT: Have you any theory as to the reason for the change in testimony?

DR. MAGRATH: I offer nothing but my condolences now. It was a very extraordinary change of front; whether he consciously intended to do that thing, I do not know, but the degree and kind of force necessary to divide the structures was far greater than the weight which the human body against the force of the unassisted flexed right hand and arm could exert. Further, it was evident from the pathological anatomy that the left common iliac artery was grasped, was taken hold of, just as in Dr. Jones's case the intestinal tract was grasped and drawn out. The change of attitude of Dr. Schultze I have never understood.

EMBOLISM AS A CAUSATIVE FACTOR IN DEATH*

BY MYRTELLE M. CANAVAN†

ABSTRACT

Emboli may be composed of

1) tumor fragments penetrating veins or lymphatics,

2) bacterial clumps circulating from foci of infection,

3) vegetations circulating from endocarditis,

4) thrombi fragments from venous thromboses, such as occur in varicose veins, phlebitis from parturient women, operations on the prostate gland, the appendix and in sinuses in the dura mater after middle ear infections,

5) worms, filaria, larval forms of tape worm, round worms, lung worms.

6) air from instrumentation—abortion, manipulation of urethra, artificial pneumothorax.

7) fat from marrow of bones, liver, body fat, liberated by trauma or operation—particularly dangerous after arthritis, infantile paralysis, osteomyelitis, or in operations on fat persons or in fat locations (breast).

WHEN I volunteered to demonstrate the Museum's collection of emboli, I had no idea that it was so small, it being represented by half a dozen specimens. Then I browsed in the library and obtained references for the years 1925-1926, and found that quite an interest is being registered from all parts of the English speaking world, and there were also some articles in German, French and Spanish.

We are all familiar with the process of metastasis in malignant growths, and in our mind's eye see the floating fragment after having penetrated the lymphatics or veins, go evenly along until it fits snugly somewhere and then establishes a residence in the new place. If this fragment is big enough to occlude the pulmonary arteries not much more remains to life—anything that cuts off the pulmonary circulation will interfere too seriously and death results. In case a whole hemisphere of the brain is cut off, it will cause death according to Blackburn, within six days (demonstrate Blackburn's[21] book) and, of course, any fragment, whether it be tumor, infective mass, vegetation or particles from distant thrombi, which interferes with the *vaso-motor* center in the medulla will make the death certificate the next paper for consideration.

You have all had obstetrical cases and watched a sudden cyanosis, pain and rise in temperature, and wondered whether she would weather the next fifteen minutes—if she did, the emboli were not plugging large vessels and the result could be counted on, but if she did not, then it had been too big and you found yourself rather helpless except to give such heart stimulants as you had and most generally hope—so that thrombi in pelvic veins after delivery may be the source of worry. Even radium contributes; Frischmann[1] reports a case of a woman of 55 who had radium for epithelioma of the vulva who on the 22nd day complained of epigastric pain, lost consciousness and died in five minutes from thrombosis in pelvic veins and emboli in the pulmonary artery.

Herrmann[2] emphasizes that pulmonary embolism may complicate heart disease, particularly malignant endocarditis or mitral stenosis with mural thrombus in the dilated right heart. Sometimes it follows quinidin administration in

*Read before the Massachusetts Medico-Legal Society, February 2, 1927.

†For record and address of author see "This Week's Issue," page 648.

cases of auricular fibrillation; but thrombosis in systemic veins may follow childbirth, operation, or infection. Recumbency and advanced age are factors, he believes. Fifty to 66% of the pulmonary circulation may be occluded with no fatal results but another per cent. may prove fatal.

The more extreme the cyanosis, the more massive the embolism.

Vietor[3]	New York Hospital operations	12615
	Fatal pulmonary embolism	21
	Mayo Clinic operations	125164
	Fat emboli	104
Shilling (ger.)		12%

Thrombosis is a function of a number of variables, first from infections, and second, postoperative pneumonias belong to the embolic class, coming on without warning.

Schwartz and Goldstein[4]. In two years, report 12 cases of hemorrhages in the striate body following embolism due to endocarditis.

Binger, Brow and Branch[5] in their experimental work mention that multiple emboli of pulmonary arteries and capillaries produced in dogs by intravenous introduction of potato starch result in rapid and shallow breathing and the gross and microscopic picture of starch in the lungs is congestion, edema and atelectasis with multiple emboli. Associated with a reduction in lung volume and believed to be accompanied by decreased elasticity, such a decrease results in shallow tidal air; the shallower, the more rapid the breathing.

de Quervain[6] states that interventions on the prostate gave highest rate of embolic deaths—4.2% in 356 patients.

Lindsay[7] believes that age is a factor in the production of thrombosis from which emboli may drift: Pelvic and iliac veins most frequently produce them.

Hulst[8] in reporting air embolism and death from criminal abortion mentions that air collects between the ovum and the uterine wall; another case was due to a broken tip of syringe cannula which had pierced the wall of the vagina and air entered, injuring the vessel wall. Death followed immediately and air was found in the heart.

Lindblom[9]. Patient died of air embolism a few seconds after the introducing of a closed needle. It had pierced a small vein and a cough had driven air into it.

Heuser[10]. Air in the bladder should not be more than 80 c.c., otherwise it may pass from bladder to the kidney and if the walls of the vessels are thin, pass into them causing fatal air embolism.

Roper[11]. A man of 60 applied for bladder diagnosis. Slight bleeding preceded air passed in for diagnosis. Emphysema of penis and all symptoms of air embolism supervened except death. He recovered.

H. A. Bishop[12] relates a history of a soldier having pulmonary tuberculosis with cavitation and treatment by artificial pneumothorax. At one refilling it was difficult to find a clear space and air was introduced under pressure. Soldier collapsed and died. Post mortem examination showed extensive tuberculosis of the lungs with bubbles of air in cerebral pial veins (? origin).

Weingarten's[13] study of 100 autopsies with no endogenous cause of death demonstrates the importance of slight trauma often overlooked. Injections of camphorated oil may give considerable accumulation of oil in pulmonary capillaries.

Schwamm[14] brings out a warning that children who have been operated upon and kept in plaster casts for a long period, are susceptible to fatty embolism because of fatty degenerations of bone marrow and the same danger impends to children with infantile paralysis who have not been walking prior to operation. Diet and proper massage should precede the surgical manipulation.

C. F. Bantin[15] reports a case of a youth of 23, 5½ mos. diabetic, who suddenly went into coma. The blood serum was creamy. Fat was seen in the retinal veins. He developed nephritis and pneumonia. He speaks of some patients with diabetes who have also an excess of fat in the blood.

E. Melchoir[16]. In one case, unexpected recovery from the initial coma was followed by renewed mobilization of fat (manipulation of dressings).

Clinical differentiation may be made between *Fat Emboli of Brain* and *Traumatic Bleeding;*

Pupils normal	Pupils abnormal
No bradycardia	Bradycardia
No choked disc	Choked disc
No headache	Headache
No vomiting	Vomiting
Punctate hemorrhages in skin	No hemorrhages in skin
Fat drops in urine (Beware of transportation after fractures!)	No drops in urine

Corlette[17] reviews the literature and emphasizes the physical signs of grave fat embolism. He is sure that some fat emboli are always present in all cases of fracture so that fat in urine should not give alarm if unassociated with other signs, but dyspnoea, rising pulse and temperature and cough point to fat emboli in lungs; restlessness, delirium and coma to emboli in brain. Skin petechiae help in the diagnosis when present.

Palmer and Ferguson[18]. Leg fractures—operation; 24 hours later patient was drowsy, became comatose, had convulsions and died five days later.

Fat emboli were found in the brain, lung, liver and skin.

Elting and Martin[19]. Free liquid fat may

gain access to blood vessels and be transported by the blood stream. Fat embolism is a surgical complication, usually occurring as a sequel to trauma, especially to long bones or fatty structures. The symptoms will depend on the *amount of fat* which enters the blood stream and also on location of fat emboli in the capillaries' entrance through ruptured vessels, also through the lymphatics by way of thoracic duct.

Elting and Martin[19] say that *Zenker in 1862* reported the first case of fat embolism of the pulmonary capillaries.

Warthin[20] in 1913 made an exhaustive review of fat embolism, and particularized a patient 20 years old who was injured in an automobile accident and fractured both femora. Death 40 hours later after development of coma and elevation of temperature, hemorrhagic petechiae over skin, pleurae, heart, intestines, bladder, and hematoma of pelvic tissues. Microscopically fat emboli were found in heart, lungs, spleen, intestines, pancreas, liver, kidneys and brain.

Elting and Martin[19]. A man of 21 years fell from a window 30 ft., fracturing humerus and femur. Death 4¾ days after accident, with symptoms of restlessness, coma and rise in temperature. The post mortem showed congestion of lungs, fractures of liver and pinpoint hemorrhages in brain. Microscopically fat emboli were in the heart, lungs, spleen, liver, pancreas, kidneys, adrenal, arm muscle, brain and in the focal necroses.

Warthin[20] states that shock, apoplexy, alcoholism, concussion or heart disease may be named as cause of death instead of fat embolism. Fat embolism occurs only in left, and may be positive evidence of traumatic death.

Fat emboli are bland and the effects are mechanical. Fat must first be liberated, and driven into the capillaries.

Chemically estimated, the lungs and spleen contained 35.45%—52—29% of fat. Normal fat content of these organs, 17%.

Clinically fat in urine and fat in sputum may lead to a diagnosis.

Chronologically, after a fracture, hours or days patient may be well. The sooner the symptoms occur, the *worse* the prognosis. Dyspnea, cough, cyanosis, pulmonary edema, increased temperature, restlessness, delirium, stupor appear in order of severity. Embolism of respiratory center is indicated. Cheyne-Stokes respiration sets in with these symptoms.

Treatment of fractures, first, rest; transportation is dangerous and there should be no tight bandages.

(For this case report I am indebted to Dr. S. B. Wolbach.)

A. 24.96. Post-operative fat embolism case. A woman of 37, married twice since 1905, had three children alive and well. One child died 7 hours after birth (instruments); another child died 2 weeks after birth (cause unknown), and there was one miscarriage at the third month. She had polyarthritis running a chronic course since the age of 12, for 25 years; three periods of exacerbation—at onset, after the miscarriage, and after the last delivery.

Laboratory tests were negative. X-ray plates showed blurring in antrum and an osteoarthritis in all joints of the extremities.

Operation consisted of forcible manipulation of the knees and the ankles. Three hours after the operation she showed signs of difficult breathing; five hours later the patient died suddenly —8 hours intervened from operation to death.

Frozen sections showed fat abundantly in the lung, in the heart, kidney, brain and cerebellum.

Dr. Schneider will remember the case of G. P., B.1918.136, a Greek mill operator who was walking on a country road Saturday afternoon, Nov. 16, 1918, when an automobile coming up behind, picked him up over the radiator and carried him some 30 ft. He was taken to the Wing Hospital in Palmer. His temperature at 6 o'clock in the evening, an hour after the accident, was 100.8. He died the following Monday at 12:05 P. M., 43 hours after the accident.

The only physical examination made, at 9 o'clock on the evening of the accident, showed him to have dulness of one apex. He was comatose throughout his stay in the hospital though the attendants thought he murmured something about the rain. At the autopsy, the day following his death, there were hemorrhages over his back, face, scalp and extremities and in the brain, cord, pancreas and liver, in the latter to an extent of three cubic inches. Microscopically, fatty emboli were found in the lungs and brain.

In cases of death following injury, either surgical or trauma of accident, with known or unknown clinical observations, it could easily become a simple routine to immerse a cut surface of a lung in water and exert gentle pressure, whereupon if fat emboli were present, oily substances would float on the water. The importance of such an observation might be most valuable in cases where accident or injury preceded a more visible cause of death.

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AN OUTBREAK OF VACATION TYPHOID FEVER

On August 14th the Department's attention was called to an outbreak of disease in Camp Tabor, a summer camp for girls, located in Lakewood, Pa., at which, it was stated, a large number of girls from Brooklyn were spending their vacation. An investigation was immediately undertaken and a list of all the New York residents who had visited the camp was obtained. It was found that the disease was typhoid fever and that the publicity given to the outbreak led to the closing of the camp on August 13th. All of the 150 New York City residents were at once visited by medical inspectors, with the result that, up to September 3rd, fifty cases of typhoid fever were discovered; among these two deaths have already occurred.

The investigation shows that a small outbreak of typhoid fever occurred at this same camp two years ago, and thus far it appears that the only employee who was at the camp at that time and again during the present outbreak was the cook. It is interesting to note that the cook gives a history of having had typhoid fever when she was twelve years old. An effort is now being made to secure stool specimens from this individual for examination. One of the victims of this outbreak, a relative of one of the girls, visited the camp July 27th to 29th. The onset of his disease was August 15th. Since the onsets of most of the other cases centre about the week from August 9th to 16th, it is likely that infection occurred during the time of this visit. The two earliest cases had August 2nd as the onset. This would indicate a minimum incubation period of about six days, which is not at all improbable.

An effort is now being made to interview and examine the rest of the kitchen help, especially those who began employment shortly before July 27th. The investigation appears to absolve the water and milk supply from any part in the outbreak.—*Bulletin New York Department of Health.*

UNDULANT FEVER

Now comes undulant fever to worry health officers, puzzle doctors and disconcert folks who are exposed to it. The disease is old, but its coming into these regions is new. Goats and cattle have been afflicted with it for a long time under the name of malta fever and contagious abortion. Hogs have only recently become victims and now it is very common among cattle, quite prevalent among swine and somewhat more widely distributed among people in Illinois than is generally realized.

Apparently man is more likely to get the disease from hogs than from cattle or goats. It seems that the germ or organism which causes the disease in swine is more virulent for the human host than the strains harbored by either cattle or goats. However, three epidemics, one at Richmond, Indiana, with 17 cases, another at Wayland, Kentucky, with 7, and one at Salem, Oregon, with 5, were reported last year as due to drinking unpasteurized milk from infected herds.

Infection usually reaches man in one of two ways. It gets into the blood through a skin wound or abrasion when a person comes into contact with a slaughtered, infected animal. It may be ingested with unpasteurized milk drawn from infected cows or goats.

Once attacked the outlook for man is quite unfavorable. Cure is difficult at best and doubtful of achievement. The illness runs a long, extended course, being characterized by general debility and symptoms that may frequently be confused for those of tuberculosis, typhoid fever or malaria. Absolute diagnosis is difficult except by laboratory test which the laboratories of the State Department of Public Health are prepared to make.

A few hundred cases have been definitely diagnosed in Indiana, Iowa and Michigan. Less than a hundred cases have been diagnosed and recognized as undulant fever in Illinois. It is believed, however, that the unrecognized prevalence is appreciable in volume. It is suggested that physicians send in specimens of fresh blood for laboratory tests from patients suffering with illness of doubtful or questionable disorders that might be undulant fever.

Pasteurization of milk and strict personal hygiene are the means of prevention. People exposed directly to contact with freshly slaughtered animals, especially hogs, might profit by wearing rubber gloves.—*Illinois Health Messenger.*

REPORT OF A CASE OF TULAREMIA

BY PAUL R. WITHINGTON, M.D.*

THE following case is of sufficient interest to justify reporting it in some detail.

On March 30, 1929, A. L., while visiting friends on an island off the coast of Georgia, was taken suddenly ill with fever and slight pains in his joints. The fever increased and he became "dopey". Not wishing to be ill away from home, he at once came north. His stomach "did not feel right"; this discomfort developed into a dull pain in the epigastrium, which later "worked down a little". Two days later, April 1, in the afternoon, he vomited a watery substance three times. There was no cough nor pain in his chest. He had no diarrhoea but had had well-formed, though small, movements.

His past history is not of consequence. He was inoculated against typhoid fever six years ago. There are no other cases of illness among the other members of the colony. Mosquitoes abound on the island.

The patient's father had pulmonary tuberculosis in 1900, but is an arrested case.

Physical examination showed a very well-developed and nourished man of 25.

Temperature, 103.6. Pulse, 76. Respirations, 20. Neck not stiff. No sinus tenderness. Throat not inflamed. Heart not enlarged; sounds of good quality; no murmurs heard. Lungs not dull; no râles, bronchial breathing, nor increased or diminished sounds. Abdomen not tender, soft; liver and spleen not felt; no masses. On pressure over McBurney's point, there was slight pain in the epigastrium. There was a slightly enlarged and tender gland in the left groin (it was questionable as to whether it was inguinal or femoral). There was a small septic abrasion on the scrotum.

The urine showed no albumin or sugar; sediment negative.

W. B. C. 11,000. Smear normal, and no malarial parasites found.

April 2. The temperature at 2 A. M. was 101, subsequent to which it became normal. The patient felt better, having had a large movement. He was to stay in bed for one day of normal temperature, then to get up for one day before going to town.

April 4. The patient went to town, but returned at noon with a temperature of 103.2, general malaise, but no localizing symptoms. Physical examination was still negative save for the gland. W. B. C. 7,000. Widal taken (which was subsequently reported "negative, save for slight clumping which may be due to his old vaccination".)

April 7. Widal again taken and this same report made. W. B. C. 6,800. Smear: no malaria found. On the theory that he might have malaria, the patient was given quinine sulphate, 10 grains three times a day for three days, then five grains three times a day, and the effect on the temperature watched.

April 10. The quinine was having no effect on the temperature and was therefore omitted. The patient was seen in consultation by Dr. Roger I. Lee. Blood culture showed no growth. The Widal test was again negative; stool examination showed no typhoid. Blood examination for agglutination for undulant fever negative.

April 12. Another stool was sent to the laboratory and no typhoid found.

April 14. Consultation with Dr. Lee. Temperature seesawing from normal to 103, the patient having occasional chills. Physical examination still negative save for the gland in the groin, which became larger and more tender, and then subsided a little.

April 15. X-ray of chest by Dr. L. B. Morrison. "Plates of the chest show the left diaphragm is about three-quarters of an inch higher than the right. The supplemental spaces are clear cut on both sides, and diaphragms are smooth and rounded. The heart is normal. The chest shows hilus scar and some fibrosis towards the right base and on the inner portion of the lungs towards the mediastinum there is some fibrosis. The outer lung fields and apices are clear. No evidence of tuberculosis. There is not enough in the chest to account for the temperature. Is the spleen enlarged so as to account for this high diaphragm?" (Clinically the spleen was not enlarged.)

April 23. The Wassermann test was negative.

April 27. The temperature had fallen. The gland was larger and more tender. A more careful history disclosed the fact that in addition to mosquitoes, there were many wood-ticks and deer-flies on the island. In fact daily "de-ticking parties" were the rule. Blood was taken and sent to the U. S. Public Health Laboratory in Washington, upon which the following report was received: ". . . This serum gave positive agglutination of B. tularense in dilution of 1:1280. It also gave agglutination of B. abortus in dilution of 1:160, complete, and partial agglutination in dilution 1:320. . . ."

May 2. Stab of the glands with a hollow needle gave a very small amount of material. This was, however, injected into two guinea pigs, intraperitoneally.

May 9. One of the pigs lost weight despite an unimpaired appetite, but neither died. Both were killed, but no evidence of pathology was found. (Material from these animals was injected into other pigs, but with negative results.)

May 15. The glands broke down and began to discharge a thin pus. Patient's general condition excellent.

June 19. Glands are still draining.

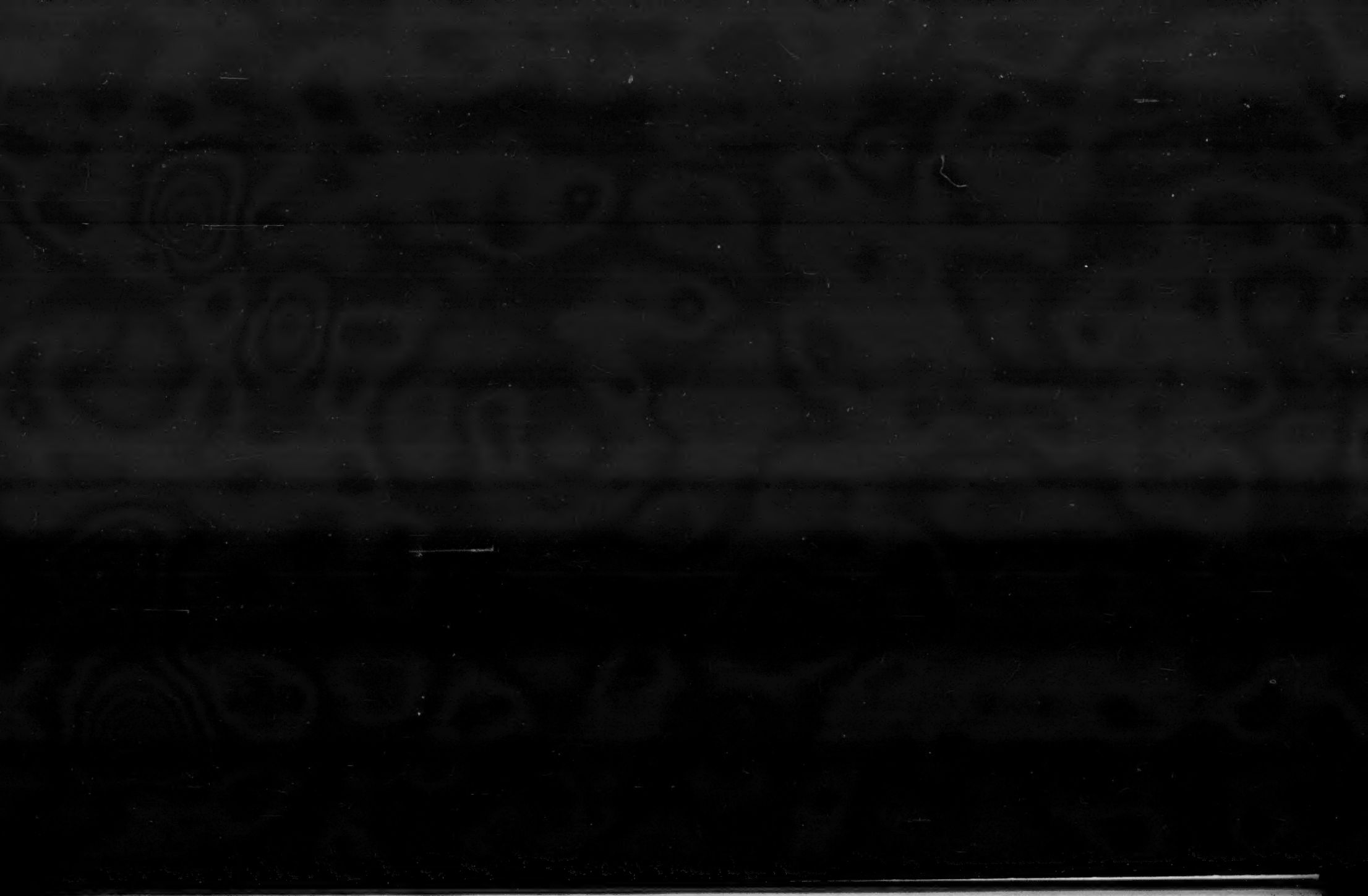
Tularemia is caused by B. tularense, a small, gram-negative, non-motile, non-spore bearing organism. It is aerobic, ferments glucose, levulose, mannose, and glycerol, forming acid but no gas.

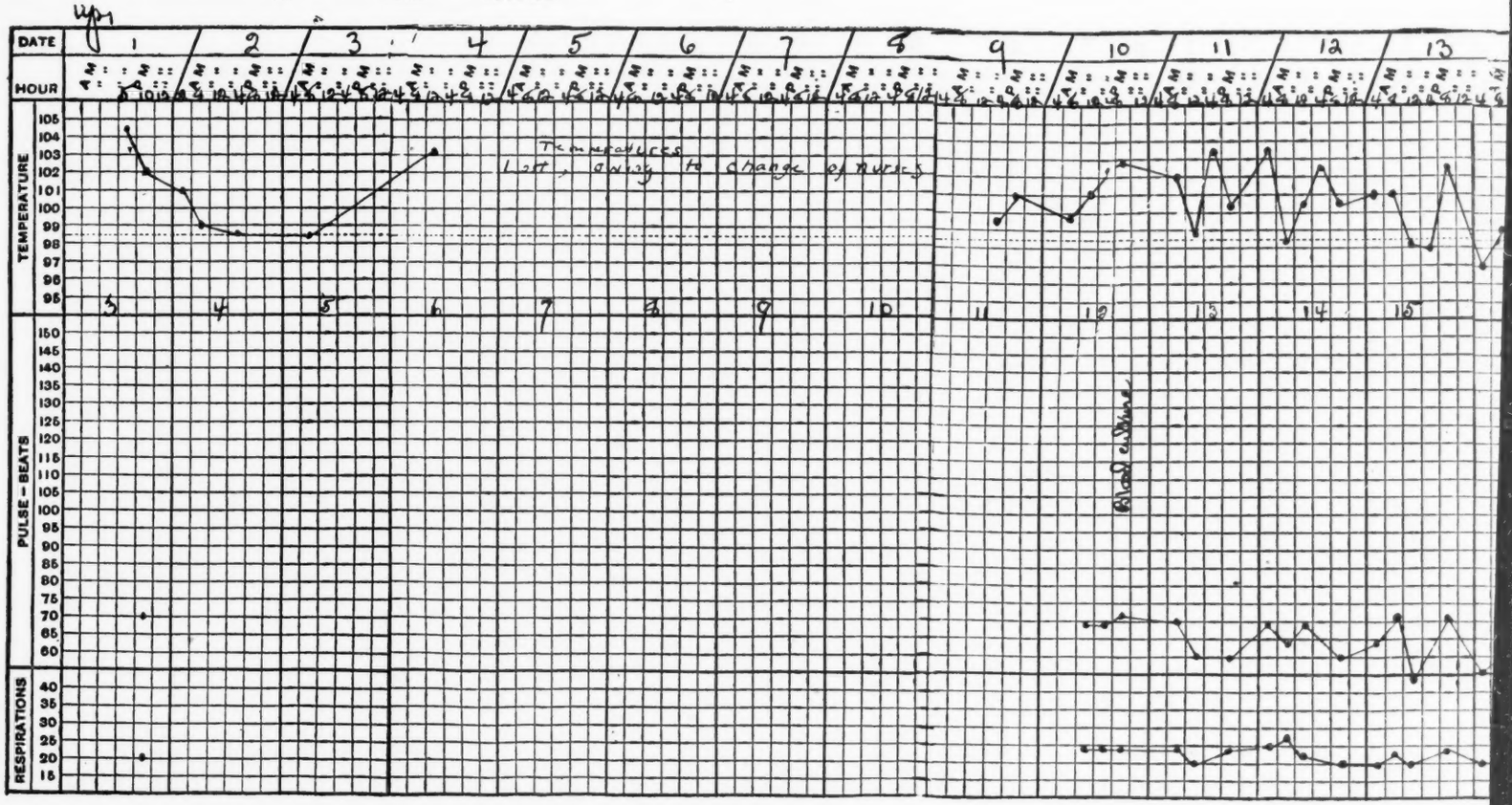
The disease occurs in wild rodents, especially ground squirrels and wild rabbits, but also in rats. It is transmitted to man directly, in cleaning the animals, or through the bites of deer-flies or of ticks. New England has hitherto escaped the disease (the case reported above did not originate here), but cases have been reported from most parts of this country and from Japan.

There are four clinical types of the disease, as follows:

1. Ulcero-glandular. The primary lesion is a papule which later becomes an ulcer, and is accompanied by regional glandular enlargement.
2. Oculo-glandular. Primary lesion conjunctivitis, which is accompanied by regional glandular enlargement.
3. Enlargement of regional lymph-nodes without ulcer.

*For record and address of author see "This Week's Issue," page 648.

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Left, owing to change of nurses
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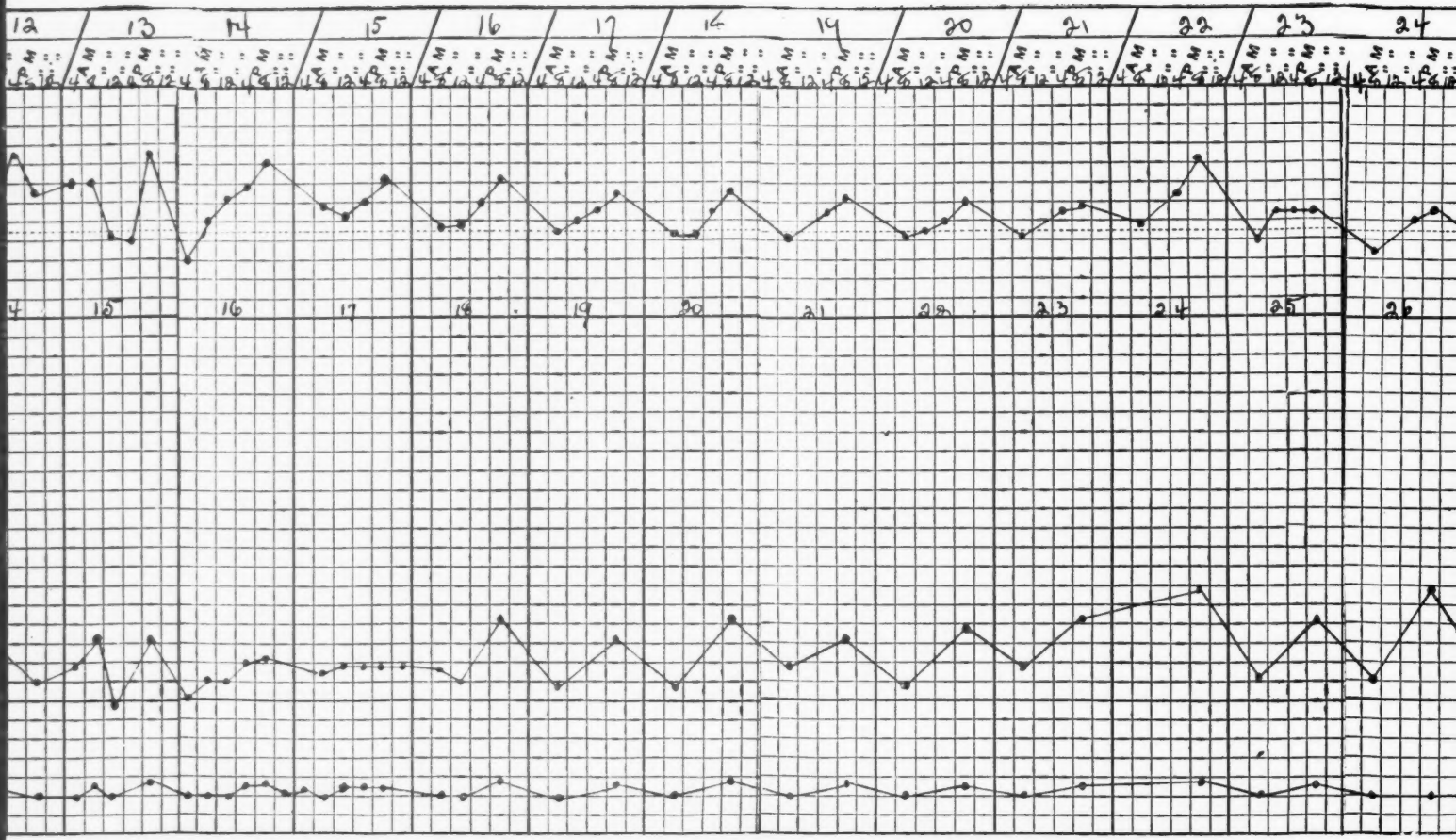
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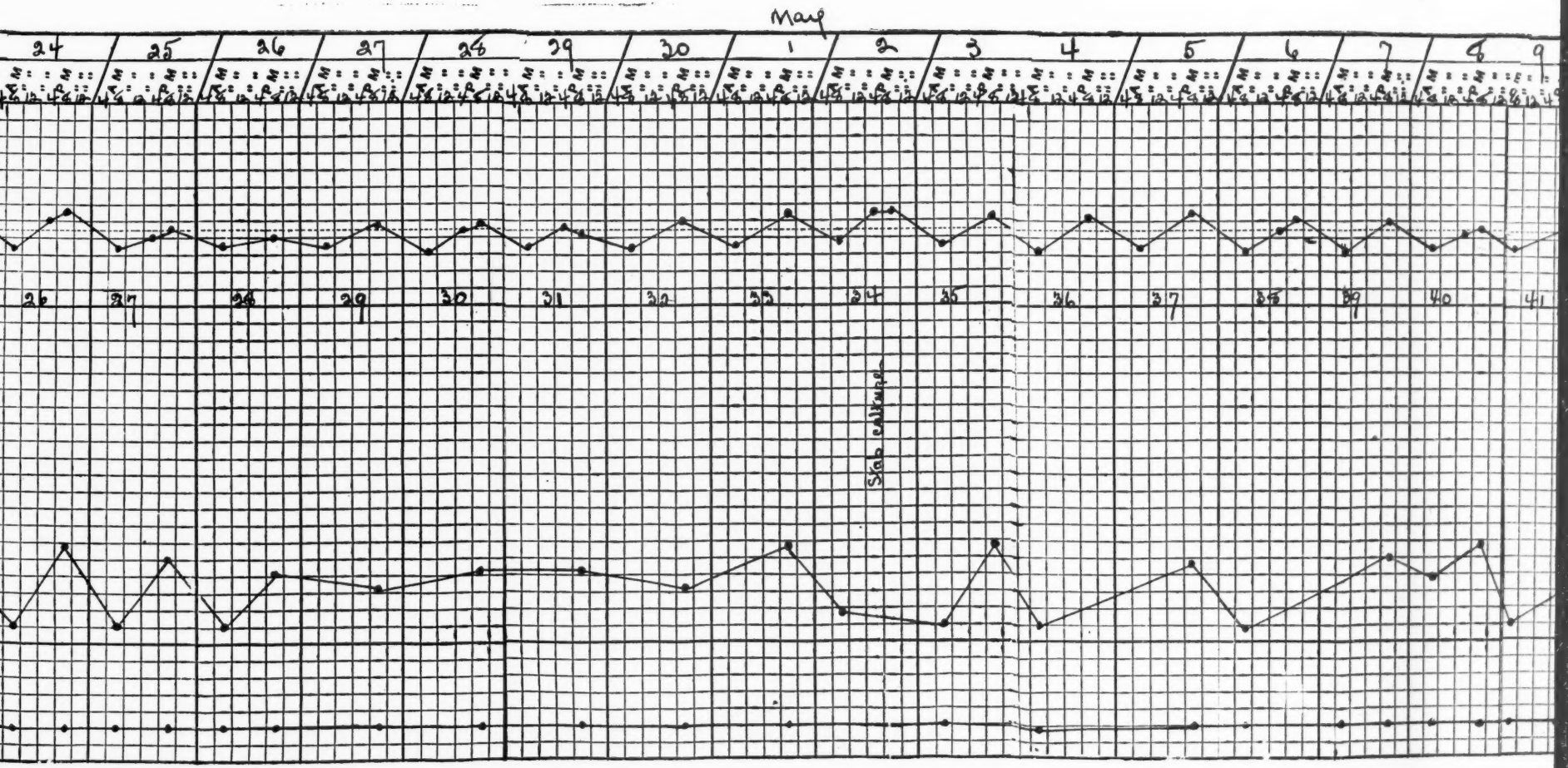
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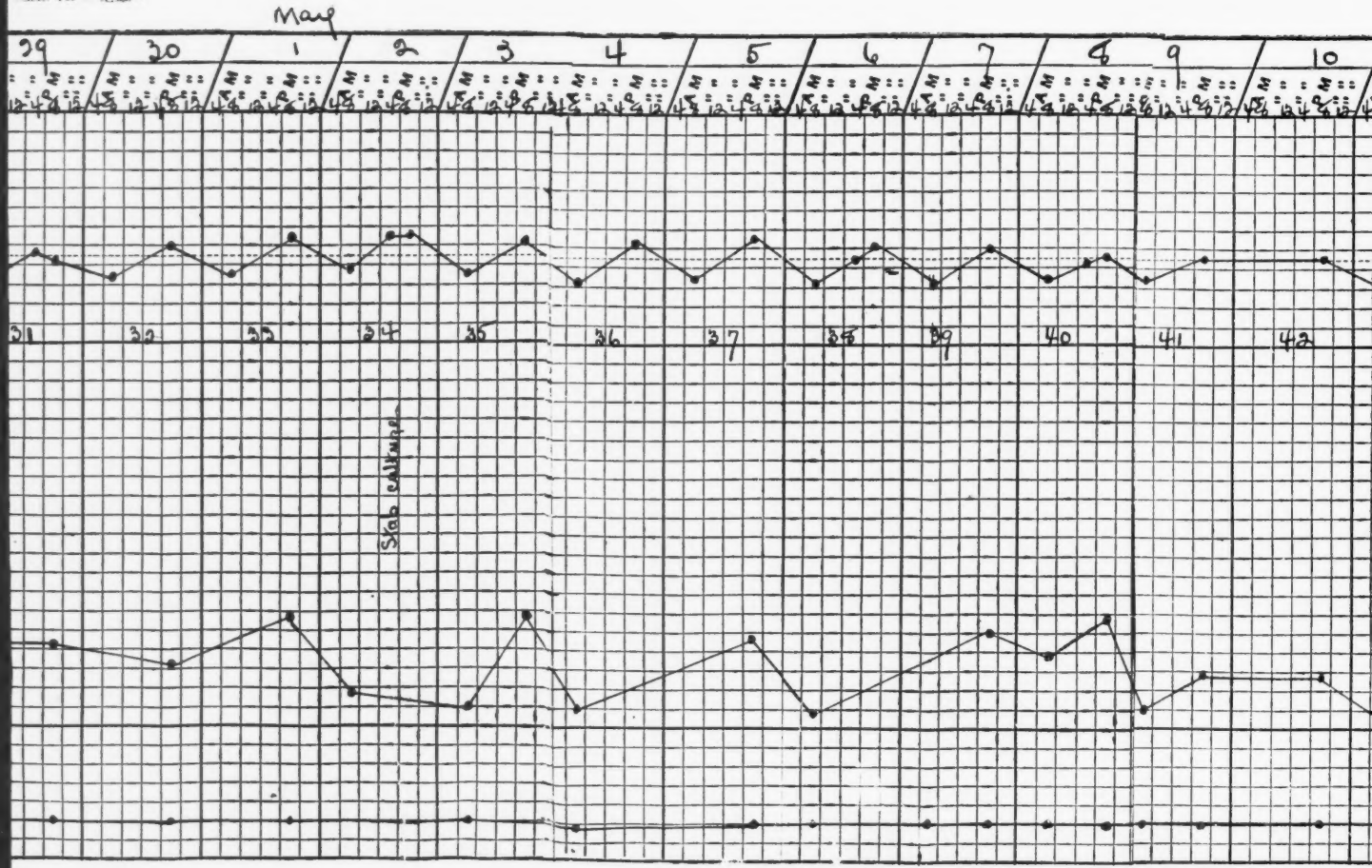
Stab culture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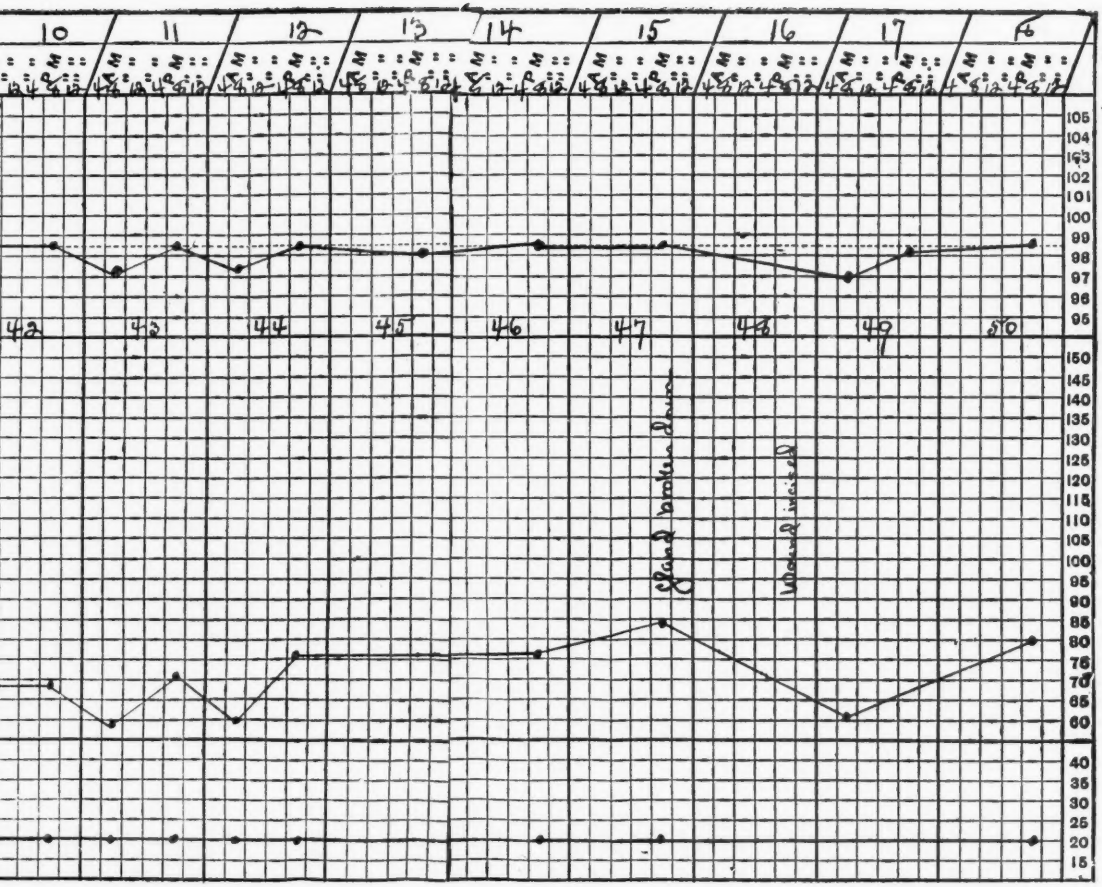
Stab Catheter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Gland broken down
Wound incised

4. Typhoidal. There is no primary lesion nor glandular enlargement, the diagnosis being made by serological examination only.

The period of incubation is from twenty-four hours to nine days, the average being three days.

The onset is sudden, and is characterized by headache, vomiting, chills, aching bodily pains, sweating, prostration, and fever. It is usual to have an early remission of temperature so that the patient wants to return to his home or to go to work, but the symptoms return with the rise in temperature. In about half the cases the glands break down; in the other half, they remain hard and tender for about three months, and are gradually absorbed. Suppuration has been noted 10 months after the onset of the disease. Convalescence is slow, 2 to 3 months being the usual duration. Relapses, lasting 6 to 8 days, have occurred 8 and 10 months after the onset.

Cross agglutination of B. tularense with B. melitensis is common in low dilution, so that, although the nature of the infection is frequently not diagnosed, it is also possible that in many cases where the diagnosis is made on a low dilution agglutination, the condition is not tularemia. A high agglutinating titre of serum for B. tularense and definite agglutination in much lower dilution of B. melitensis is characteristic of active cases of tularemia. The diagnosis of tularemia in the case just described is justified by the history of repeated exposure to the bites of ticks, the clinical course of the infection, and the serological reactions, despite the fact that the organisms were not recovered.

I wish to express my appreciation to Dr. Roger I. Lee and Dr. A. Watson Sellards for their assistance in this case.

SOME PARASITIC DISEASES THAT MAY BE TRANSMITTED BY DOGS AND CATS

Cats and dogs are subject to various parasites which may attack human beings also, but the practical side of the problem varies according to circumstances. In general, small house dogs are much less likely to transmit disease than are big dogs which roam at large; and in general, also, cats are less dangerous than dogs.

The two most important parasitic diseases transmitted to man by dogs in North America are hydrophobia, or rabies, and hydatid disease; and of these, hydrophobia is the more serious.

Mad dogs, and, less frequently, mad cats, can by their bite transmit hydrophobia to human beings. Hydrophobia does not develop in a dog unless that particular dog has been bitten by some other animal which has the disease. Generally, therefore, pet dogs are not likely to transmit the disease. If, however, a pet dog is bitten by a street dog it must be regarded as in danger of developing the disease for at least six months.

Hydatid disease is a serious problem in some countries where dogs are numerous and live intimately with people; but, fortunately, it is one of the minor problems in the United States. Dogs and, more rarely, cats have in their intestine a small tapeworm, usually less than a quarter of an inch long. This tapeworm produces eggs which the dog scatters around the field. When these eggs are swallowed by pasturing cattle, sheep, or swine, the embryo breaks loose from the egg shell and bores to the liver, lungs, or some other portion of the body of the pasturing animal. It then develops into a cyst which may grow to be as large as a man's fist or even larger. In this cyst numerous tapeworm heads form; and when the cyst, discarded at some country slaughterhouse, is eaten by a dog, each tiny worm head develops into a small tapeworm. If, by chance, eggs from the dog-tapeworm are swallowed by persons, either through too great an intimacy with dogs or through the medium of contaminated food, man contracts the cyst, or hydatid, which is more usually found in cattle, sheep, or swine. Dogs and cats which have no opportunity to eat the infected organs of other animals do not harbor the tapeworm, and, therefore, cannot transmit hydatid disease.

In some parts of the United States both cats and dogs harbor a special intestinal parasite known as the Brazilian hookworm. This same hookworm is occasionally reported as an intestinal parasite of man, but the worm has gained special disrepute as cause of a skin disease of man. In some of the warmer localities there is a condition known as creeping eruption. Not only is this a very irritating condition, but its presence in certain localities has been an economic factor in driving away tourists and in decreasing real estate values. Creeping eruption in man can be caused by various different immature worms and by larval insects. The ill-famed creeping eruption of warmer localities in the United States is due to the fact that if a person comes in contact with soil, as in the garden, which has become contaminated by dogs or cats with young larvae of the Brazilian hookworm, the young worms penetrate the human skin and produce creeping eruption.

Among the less important parasites of dogs transmissible to man may be mentioned a tapeworm and the so-called tongue worm.

Cats may have a skin disease caused by a mite which is closely allied to the parasite which causes itch in persons. This cat parasite may pass from cats to persons, especially to children, and cause a special form of itch. Sometimes this cat itch becomes almost epidemic among the children in orphanages, but it is a rare condition in the general population.

Dogs are much more important factors in transmitting parasitic diseases to live stock than they are in transmitting these diseases to man. In spite of the fame of Old Dog Tray, we should recall that he is a dog, not a human being, that he may harbor parasites which attack man, and that as too intimate a companion he may become a distinct danger.

There is a curious psychology among dog owners. The saying, "Love me, love my dog" is not an exaggeration of the affection of many persons for their canine friends. Some dog owners take proper precautions that their dogs shall be a nuisance neither to themselves nor their neighbors; but, unfortunately, too frequently dog owners, through a lack of reasonable care, permit their pets to be neighborhood nuisances and public health dangers. It must be said in all fairness, however, that the fault in these cases is chargeable more to the owners than to the dogs.—*United States Public Health Service.*

VERMONT STATE MEDICAL SOCIETY

REPORT OF THE SECRETARY

The Secretary is unable to report that the burdens of the office become any lighter with succeeding years. More time than ever has been devoted to the work this past year. On the other hand, it may be said that the work has been unusually pleasant.

The Vermont State Board of Health and the Vermont State Medical Society, meeting jointly under the auspices of the Infant and Maternal Welfare division of the Children's Bureau of the Federal Government, held meetings in each of the County Societies during the month of March, 1929. Because of several reasons beyond our control, these meetings were held in March, at the time when highways were in the worst possible condition. Consequently many men were not able to attend these meetings. Considering the circumstances, however, they were considered highly successful. Four talks were given, namely: "The Reduction of Maternal Mortality," by Oliver N. Eastman; "The Reduction of Infant Mortality," Charles K. Johnson; "The Importance of Vital Statistics," Dr. Charles F. Dalton; "Care of the Eyes in Infancy," by Wm. G. Ricker.

This work consumed the entire time of two weeks. The Secretary understands that it is the wish of the County Societies that a series of meetings similar to these be held each year. The Secretary will make no promises, but will do his best.

The attention of the House of Delegates is called to a proposed change in the constitution. This proposed change makes it possible to hold the meeting during any week of the month of October instead of on a fixed date, the reason being that the fixed date at times has conflicted with important national meetings which many of our own members wish to attend. It is assumed, however, that when no conflict arises the meeting will be held on the date corresponding to the previous terms of the constitution. This amendment was proposed in proper form, in the meeting of the House of Delegates in the year 1928, and will receive final action at the 1929 meeting.

For personal reasons the Secretary was not able to take the time to act as delegate to the American Medical Association at the annual meeting in Portland in July, 1929. The alternate, Dr. C. H. Beecher, also was not able to attend. The Council of the State Medical Society, being the governing body, between sessions of the House of Delegates, ratified the selection and appointed Dr. J. N. Jenne to act in this capacity, and supplied him with the proper credentials. Dr. Jenne attended the meeting and acted as delegate.

The New England Medical Council continues as an active functioning body. Report of the last meeting appears elsewhere in this issue. The next meeting is to be held at Bellows Falls, Friday afternoon, October 11, after the close of our own annual state meeting.

Your attention is called to a proposal that the New England States unite in the ownership of the NEW ENGLAND JOURNAL OF MEDICINE. This proposal has not yet been submitted in concrete form, but is worthy of your thought.

Apologies are offered to all members who have received a notice from the Secretary's office that they have not paid their dues when as a matter of fact they hold receipts. These dues are traced by means of a voucher system which, however, does not eliminate the human element. Until, and unless, the Secretary holds the proper voucher, he has no knowledge that a member has paid his dues, and under the terms of the constitution and by-laws must notify the member accordingly. So far as is known, each error of the past year has been adjusted.

Inasmuch as publication of the transactions has been discontinued, Article VII of the by-laws is obviously obsolete. The Secretary suggests that this Article be revised to correspond with present conditions.

Respectfully submitted,
WM. G. RICKER, *Secretary.*

SUPPLEMENT TO SECRETARY'S REPORT

	Membership 1928	Membership 1929	Increase	Decrease
Addison	15	14		1
Bennington	21	20		1
Chittenden	75	75		
Franklin	28	28		
Lamoille	8	9	1	
Northeastern	46	43		3
Rutland	53	50		3
Washington	54	52		2
Windham	27	28	1	
Windsor	21	22	1	
	348	341	3	10

REPORT OF PUBLICATION COMMITTEE

The existing arrangement between the NEW ENGLAND JOURNAL OF MEDICINE and the Vermont State Medical Society is now in its second year.

The papers of annual state meetings which were available and the discussions of infant and maternal welfare given before the county societies have all been published.

The Committee on Necrology have supplied the proper reading notices for the deceased members, and the Vermont State Board of Health has rendered with commendable regularity monthly reports of their work.

An earnest attempt has been made to secure reports from the county societies. The response to these efforts has been a disappointment to the Publication Committee. However the committee realize the difficulty on the part of the county secretaries in furnishing what might be considered interesting items. This effort should be continued, for this feature of the JOURNAL is of interest to every member.

Attention is called to the Treasurer's report. This shows cost of publication to have been $549.16, a considerable increase over the cost of the previous Vermont bulletin. Fortunately the treasury is in condition to meet this expense and the value of the circulation through the medium of NEW ENGLAND JOURNAL OF MEDICINE certainly is superior to that of the bulletin. On the other hand the books of the JOURNAL show that they are doing this work for the society at a financial loss, the burden of which falls upon the Massachusetts Medical Society. If a sufficient number of the members will subscribe to the full fifty-two issues of the JOURNAL, the cost of which is $3.00 in addition to the present dues, the obligation of the society will be discharged. This need not be considered a contribution to the JOURNAL or to the Massachusetts Medical Society, for the reason that the JOURNAL itself is worth the money, being one of the very best, if not the best, of the state publications, and being one of the very few medical weeklies in the country.

Respectfully submitted,
W. G. RICKER
C. F. DALTON
J. A. WARK
Publication Committee

REPORT OF THE MEDICO-LEGAL COMMITTEE

St. Albans, Vt.

To the Members of Vermont State Medical Society.

The Medico-legal Committee wish to report to the society that during the past year our income has greatly exceeded our expenses.

Two cases have come to our attention, and in each case progress is being made satisfactorily.

Respectfully,
EDWIN A. HYATT, *Secretary.*

REPORT OF NECROLOGY COMMITTEE

The following deaths of members of the profession in the State of Vermont, have been reported in the Vermont issue of the NEW ENGLAND JOURNAL OF MEDICINE during the past year, and we refer you to said JOURNAL for detailed reports. Several of the list have been outstanding members of this organization and will be greatly missed by all.

Dr. D. J. Carroll, Rutland.
Dr. Wm. Lindsay, Montpelier.
Dr. N. E. Avery, Barre.
Dr. R. M. McSweeney, St. Johnsbury.
Dr. G. B. French, Concord.
Dr. J. T. Rudden, Bellows Falls.
Dr. G. F. Adams, Newport.
Dr. J. J. Ross, Middlebury.
Dr. L. H. Gillette, Springfield.
Dr. W. N. Bryant, Springfield.
Dr. E. M. Nichols, Barton.
Dr. J. S. Eastwood, Bristol.
Dr. G. F. Hubbell, Marshfield.

Respectfully submitted,
L. A. RUSSLOW
H. L. PIERCE
B. D. ADAMS
Necrology Committee.

REPORT OF THE NEW ENGLAND MEDICAL COUNCIL

To Members of the Vermont Medical Society:

On Jan. 14, 1929, a session of the New England Medical Council was held in Boston. Your society was represented by Drs. Ricker and Hyatt. The subjects discussed were Reciprocity Among the New England States, Our Nursing Problems and a more general ownership of the NEW ENGLAND JOURNAL OF MEDICINE by the New England States.

A very interesting paper was read by Dr. John M. Birnie on "Examinations by State Medical Registration Boards and Reciprocity". In this paper and the discussion it was brought out that, as Dr. W. Scott Nay has said, "the reciprocity feature in medical licensure is now in the discard as being quite ancient and unsatisfactory". Registration by endorsement is taking its place. This system makes it possible to eliminate the undesirable registrants of other states, and at the same time easy for the reputable practitioner to secure registration in other states. Some of the state laws may seem to interfere, but a working agreement seems possible for our six New England States.

Dr. J. B. Howland of the Peter Bent Brigham Hospital gave a very instructive talk on the nursing problem. Many and varied committees are now studying and discussing this subject. Dr. Howland suggested that all physicians would be interested and profited by reading the book "Nurses, Patients and Pocketbooks", a report of a study by the committee on Grading of Nursing Schools.

Dr. Parker of N. H. again urged that the New England States become part owners in the NEW ENGLAND JOURNAL OF MEDICINE, sharing their pro rata cost of publication and representation on the editorial board, if such arrangements could be made with the Massachusetts Medical Society. It was shown that the cost would not be materially greater than we are now paying, and receiving only one copy a month, yet the benefits would be many times greater.

The next session of the New England Medical Council is to be held in conjunction with the Vermont State Medical Society.

Respectfully,
EDWIN A. HYATT.

REPORT OF THE TREASURER

For the Year Ending September 12, 1929.

GENERAL ACCOUNT

Receipts

1928		
Sept. 15	Balance on hand	$662.22
Oct. 18	Received from The Denver Chemical Co.	15.00
Oct. 18	Received from Mead, Johnson Co.	15.00
Oct. 18	Received from Deshell Laboratories	15.00
Oct. 18	Received from American Optical Co.	15.00
Oct. 18	Received from Lederle Antitoxin Laboratories	15.00
Oct. 26	Received from Victor X-Ray Corporation	15.00
Oct. 26	Received from George C. Frye Co.	30.00
Oct. 26	Received from Surgeons & Physicians Supply Co.	15.00
Nov. 3	Received from Vermont Peoples Nat. Bank, income Dr. H. D. Holton Trust Fund	65.00
Nov. 24	Received from Mrs. E. E. Eastman, cakes sold	2.10
	Received from Addison Co. dues $4 each	48.00
	Received from Bennington Co. dues $4 each	68.00
	Received from Chittenden Co. dues $4 each	312.00
	Received from Franklin Co. dues $4 each	100.00
	Received from Lamoille Co. dues $4 each	36.00
	Received from Northeastern Co. dues $4 each	144.00
	Received from Rutland Co. dues $4 each	168.00
	Received from Washington Co. dues $4 each	188.00
	Received from Windham Co. dues $4 each	122.00
	Received from Windsor Co. dues $4 each	88.00
	Total balance on hand and receipts	$2138.32
	Transferred to Vermont Bulletin Acct.	9.88
	Balance	$2128.44

Disbursements

1928		
Sept. 24	Paid Dr. Walter P. Bowers balance expenses New England Council Meeting	$84.80
Sept. 24	Paid Whitehead & Hoag badges for 1928	47.30
Oct. 3	Paid the Cowles Press printing programs of Annual Meeting	31.36
Oct. 3	Paid the Passumpsic Savings Bank, rent Secretary's safe deposit box	7.50
Oct. 27	Paid C. L. Soule & Co. cigars	6.15
Oct. 27	Paid Mrs. M. F. Porter food	4.25
Oct. 27	Paid Rev. I. C. Smart services	5.00
Oct. 27	Paid J. C. Boldosser services	10.00

Oct. 27 Paid Allen C. Johnson music ladies tea	$7.50
Oct. 27 Paid Hotel Vermont rooms and meals of speakers	40.05
Oct. 27 Paid Hotel Vermont banquet, tickets and cigars	23.25
Oct. 27 Paid Dr. L. A. Russlow typing obituaries	1.30
Oct. 27 Paid Dr. R. I. Lee expenses	24.34
Oct. 27 Paid Dr. A. T. Bazin expenses	13.00
Oct. 27 Paid Dr. J. L. Morse expenses	24.39
Oct. 27 Paid Dr. Bronson Crothers expenses	25.00
Oct. 27 Paid Dr. E. A. Crossman income Dr. H. D. Holton Trust Fund	65.00
Nov. 5 Paid Dr. K. D. Blackfan expenses	25.00
Nov. 24 Paid Mrs. John A. Smith ladies tea	12.00
Dec. 15 Paid Dr. Stewart Ross, Rutland Co. return dues Dr. E. R. Lynch	2.00
Dec. 19 Paid Dr. William G. Ricker, salary and expenses 1928	142.87
1929	
Jan. 5 Paid the Klifa Club, use of rooms	5.00
Jan. 10 Paid the Cowles Press, printing dues sheets	5.63
Jan. 19 Paid T. S. Peck Ins. Agency, Treasurer's Bond	12.50
Jan. 19 Paid the Cowles Press, printing envelopes	1.96
Feb. 1 Paid Susan A. Nott, reporting Annual Meeting	100.00
Mch. 9 Paid Free Press Association, envelopes and printing	5.75
Apr. 2 Paid Sec. New England Medical Council, expenses January meeting	55.00
Aug. 21 Paid American Medical Association, one copy Am. Medical Directory for Secretary	12.00
Sept. 12 Paid David Marvin, postage and telephones	6.50
Total disbursements	$806.40
Balance on hand	1322.04
Total disbursements and funds on hand	$2128.44

VERMONT BULLETIN ACCOUNT

Receipts

1928	
Sept. 15 Balance on hand	$220.78
Received from 318½ dues ($1 each)	318.50
Total balance on hand and receipts	$539.28
Received from General Acct. to balance disbursements	9.88
Total balance	$549.16

Disbursements

1928	
Oct. 30 Paid BOSTON MEDICAL AND SURGICAL JOURNAL, printing reprints	$27.57
Dec. 7 Paid NEW ENGLAND JOURNAL OF MEDICINE, printing reprints	13.70
Dec. 8 Paid NEW ENGLAND JOURNAL OF MEDICINE, five extra copies of Nov.	1.25
Dec. 15 Paid NEW ENGLAND JOURNAL OF MEDICINE, 1024 copies JOURNAL	85.25
Dec. 15 Paid Dr. Stewart Ross, Rutland Co. return dues Dr. E. R. Lynch	1.00
1929	
Jan. 29 Paid NEW ENGLAND JOURNAL OF MEDICINE, printing 1012 copies	84.25
Feb. 4 Paid NEW ENGLAND JOURNAL OF MEDICINE reprints	25.95
Feb. 6 Paid NEW ENGLAND JOURNAL OF MEDICINE, postage on JOURNALS for 1928	89.76
July 9—Paid NEW ENGLAND JOURNAL OF MEDICINE, printing JOURNAL for Jan., Feb., and Mar.	$106.93
Aug. 8 Paid NEW ENGLAND JOURNAL OF MEDICINE, printing JOURNAL Apr., May and June	112.50
Sept. 7 Paid NEW ENGLAND JOURNAL OF MEDICINE, reprints	1.00
Total disbursements	$549.16

MEDICO-LEGAL ACCOUNT

Receipts

1928	
Sept. 17 Balance on hand	$9881.84
1929	
Jan. 1 Received interest on savings account	153.89
July 1 Received interest on savings account	183.61
*Received from 307½ dues $5 each	1537.50
Total balance on hand and receipts	$11,756.84

*Eleven members exempt

Disbursements

1928	
Dec. 15 Paid Dr. Stewart Ross, Rutland Co. return dues Dr. E. R. Lynch	$7.00
1929	
Apr. 11 Paid Warren R. Austin, special services for years 1925-'28	350.80
Total disbursements	$357.80
Balance on hand	11,399.04
Total balance on hand and disbursements	$11,756.84

TOTAL ASSETS

General Account	$1322.04
Medico-Legal Fund	11,399.04
Total Assets	$12,721.08

Respectfully submitted,
DAVID MARVIN, *Treasurer.*

REPORT OF AUDITOR

I have examined statement and vouchers of David Marvin, M.D., Treasurer Vermont State Medical Society, and found that they agree.

W. M. JOHNSTONE, M.D., *Auditor.*

September 21, 1929, Morrisville, Vermont.

MISCELLANY

BENNINGTON COUNTY MEDICAL SOCIETY NOTES

John E. Trotter, M.D., F.A.C.S. and Miss Margaret Shea, R.N., were united in marriage at Bennington, Vt., August 23rd. Dr. Trotter is a graduate of the University of Vermont Medical School and is Chief Surgeon at the Putnam Memorial Hospital. Miss Shea is a graduate of the training school of the Troy Hospital and was chief nurse supervisor at Putnam Hospital for several years. The contracting parties are well known in the medical and nursing fraternities of this region and the congratulations of all go with them.

Dr. and Mrs J. D. Lane of Bennington are spending their vacation on the New England coast.

REPORT FROM THE VERMONT DEPARTMENT OF PUBLIC HEALTH AUGUST, 1929

A circular letter was sent out on the subject of smallpox vaccination to all physicians, health officers and chairmen of school boards in the state.

An outbreak of typhoid fever occurred among the sisters of St. Joseph's at their convent at Rutland about the middle of the month. The cases came to our attention when bloods were sent to the laboratory for examination on the 9th and 10th. The situation was immediately investigated and it was decided that the cases were undoubtedly due to the presence of a carrier connected either with the milk or other food. Specimens are now being studied in the laboratory. There have been ten cases in the group, two of whom died. Some of these cases were only mildly ill. There are some interesting features connected with this outbreak, viz., that out of 105 sisters in the convent, 18 gave a history of having had typhoid fever and two of these were working in the kitchen preparing food. One of these latter has had typhoid fever within three years. Another matter of interest is the connection with these cases of a man demonstrated to be a typhoid carrier in 1911, and at that time undoubtedly infected milk which caused the death of a doctor's wife in Rutland. This man is now about seventy-two years of age and works at the convent but all reports indicate that he has had nothing to do with milk handling or the handling of other food.

The detailed report of disease incidence during the month is as follows: chickenpox 24, diphtheria 5, measles 49, mumps 14, poliomyelitis 6, scarlet fever 13, smallpox 17, typhoid fever 10, whooping cough 53, and tuberculosis 19.

The Laboratory of Hygiene made the following examinations during August:

Examinations	
For diphtheria bacilli	91
For Widal reaction of typhoid fever	63
For malaria parasites	2
For tubercle bacilli	224
For evidence of syphilis	311
For gonococci in pus	129
Of blood for contagious abortion in cattle	150
Of water, chemical and bacteriological	169
Of water, bacteriological	123
Of milk, market	118
Of milk, submitted for chemical only	6
Of milk, submitted for microscopical only	34
Of foods	16
Of drugs	1
For the courts, autopsies	4
For the courts, miscellaneous	27
Miscellaneous examinations	108

In the Division of Communicable Diseases 46 cases of gonorrhea and 23 cases of syphilis were reported Three patients were treated for gonorrhea and 11 for syphilis. Eleven cases reported for intravenous treatment. 362 Wasserman outfits were sent out and 250 gonorrheal outfits.

508 patients were seen by the nurses of the Poliomyelitis After-care Division, 467 at the summer clinics and 41 in their homes. Forty-seven home visits have been made during the month, seven new pieces of apparatus fitted, 56 orthopedic corrections were made to shoes, 24 pieces of apparatus repaired and one plaster removed.

Sales amounting to $408.75 were made, this work being done under the supervision of the vocational teacher.

Fifteen towns have been visited by the nurse of the Maternity and Infancy Division, clinics being held in seven of these towns.

ANNUAL MEETING, BELLOWS FALLS, OCTOBER 10 AND 11, 1929

Provisional Program

Thursday Forenoon

1. Vice President's Address, George R. Anderson. Title: "Some Observations on Spinal Anaesthesia."
2. "Workmen's Compensation Under the Vermont Law." Clarence White, Commissioner of Industries.
3. "The Injection Treatment of Varicose Veins." C. A. Ravey.
4. "The Nostrum and the Public Health." Arthur J. Cramp, M.D.

Thursday Afternoon

5. President's Address, Charles F. Dalton.
6. "Serums and Vaccines in the Prevention and Treatment of Communicable Diseases." Benjamin White, Ph.D.
7. "Cancer Clinics, Their Difficulties and Advantages." Robert S. Greenough.
8. "The Treatment of Cutaneous Burns." Frederick W. Bancroft.

Friday Forenoon

Symposium on Diseases of the Respiratory Tract.

1. "The Common Cold." Dr. Frederick N. Sperry.
2. "The Diagnosis and Treatment of Pneumonia." Dr. Francis G. Blake.
3. "The Surgical Treatment of Chronic Diseases of the Respiratory Tract." Dr. Samuel C. Harvey.
4. "The Diagnosis and Treatment of Hay Fever." Dr. James D. Trask.

VERMONT MORTALITY STATISTICS: 1928

Washington, D. C., Sept. 2, 1929—The Department of Commerce announces that the 1928 death rate for Vermont was 1,386.9 per 100,000 population as compared with 1,385.2 in 1927.

Increases in rates (per 100,000 population) from those of the preceding year were from the following principal causes: cerebral hemorrhage and softening (139.3 to 152.1), diseases of the heart (266.4 to 276.9), with a total of 976 cases, cancer (131.7 to 139.6), with a total of 492 cases, and tuberculosis, all forms (70.1 to 74.9). Increases were shown also for pneumonia, all forms (86.8 to 97.9), influenza (38.0 to 41.1), cirrhosis of the liver (6.5 to 9.1), and acute anterior poliomyelitis (1.1 to 2.6).

The death rate from automobile accidents (excluding collisions with railroad trains and street cars) increased from 17.0 to 19.6.

Measles, which caused the death of 35 persons in 1927, a rate of 9.9 per 100,000 population, was responsible for no deaths at all in 1928. Decreases in rates for 1928 were shown also for whooping cough (11.3 to 3.4), bronchitis (11.3 to 7.9), and scarlet fever (3.1 to 1.7).

The death rate from all accidental causes decreased from 101.6 to 88.5, the individual types of accidents showing the greatest decreases being accidental drowning (21.3 to 10.8), accidental falls (26.4 to 21.0), and railroad accidents (7.9 to 3.7).

The population of January 1, 1920 (352,428) was used in computing rates. No estimate for subsequent years has been made because the population of this state decreased between 1910 and 1920.

Cause of Death	Deaths in Vermont			
	Number		Rate per 100,000 estimated population	
	1928	1927	1928	1927
ALL causes 1/	4,888	4,882	1,386.9	1,385.2
Typhoid and paratyphoid fever	8	11	2.3	3.1
Malaria	-	1	-	0.3
Smallpox	-	-	-	-
Measles	-	35	-	9.9
Scarlet fever	6	11	1.7	3.1
Whooping cough	12	40	3.4	11.3
Diphtheria	10	9	2.8	2.6
Influenza	145	134	41.1	38.0
Dysentery	-	2	-	0.6
Erysipelas	12	6	3.4	1.7
Acute anterior poliomyelitis	9	4	2.6	1.1
Lethargic encephalitis	5	3	1.4	0.9
Meningococcus meningitis	5	2	1.4	0.6
Tuberculosis (all forms)	264	247	74.9	70.1
Of the respiratory system	225	205	63.8	58.2
Of the meninges, central nervous system	22	15	6.2	4.3
Other forms	17	27	4.8	7.7
Syphilis 2/	16	34	4.5	9.6
Cancer and other malignant tumors	492	464	139.6	131.7
Rheumatism	16	15	4.5	4.3
Pellagra	2	1	0.6	0.3
Diabetes mellitus	95	92	27.0	26.1
Meningitis (non-epidemic)	11	10	3.1	2.8
Cerebral hemorrhage and softening	536	491	152.1	139.3
Paralysis without specified cause	7	8	2.0	2.3
Diseases of the heart	976	939	276.9	266.4
Diseases of the arteries, atheroma, aneurysm, etc.	173	182	49.1	51.6
Bronchitis	28	40	7.9	11.3
Pneumonia (all forms)	345	306	97.9	86.8
Respiratory diseases other than bronchitis and pneumonia (all forms)	21	35	6.0	9.9
Diarrhea and enteritis	53	59	15.0	16.7
Diarrhea and enteritis (under 2 years)	34	33	9.6	9.4
Diarrhea and enteritis (2 years and over)	19	26	5.4	7.4
Appendicitis and typhlitis	62	60	17.6	17.0
Hernia, intestinal obstruction	39	45	11.1	12.8
Cirrhosis of the liver	32	23	9.1	6.5
Nephritis	377	376	107.0	106.7
Puerperal septicemia	14	15	4.0	4.3
Puerperal causes other than puerperal septicemia	27	36	7.7	10.2
Congenital malformations and diseases of early infancy	296	302	84.0	85.7
Suicide	42	49	11.9	13.9
Homicide	5	3	1.4	0.9
Accidental and unspecified external causes	312	358	88.5	101.6
Burns (conflagration excepted)	15	16	4.3	4.5
Accidental drowning	38	75	10.3	21.3
Accidental shooting	3	6	0.9	1.7
Accidental falls	74	93	21.0	26.4
Mine accidents	-	-	-	-
Machinery accidents	11	8	3.1	2.3
Railroad accidents	13	28	3.7	7.9
Collision with automobile	3	6	0.9	1.7
Other railroad accidents	10	22	2.8	6.2
Street-car accidents	-	1	-	0.3
Collision with automobile	-	-	-	-
Other street-car accidents	-	1	-	0.3
Automobile accidents (excluding collision with railroad trains and street cars)	69	60	19.6	17.0
Injuries by vehicles other than railroad trains, street cars, and automobiles 3/	16	10	4.5	2.8
Excessive heat (burns excepted)	1	1	0.3	0.3
Other external causes	72	60	20.4	17.0
All other defined causes	420	423	119.2	120.0
Unknown or ill-defined causes	15	11	4.3	3.1

1/ Exclusive of stillbirths.
2/ Includes tabes dorsalis (locomotor ataxia) and general paralysis of the insane.
3/ Includes airplane, balloon, and motor-cycle accidents.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15391

PRECORDIAL PAIN AND DYSPHAGIA

MEDICAL DEPARTMENT

A Canadian-American gardener forty-eight years old entered June 23 complaining of cough of six weeks' duration.

For the past ten years he had had sharp knife-like pain in the precordia lasting a minute and occasionally radiating to the left shoulder and down the left arm. There was no relation to exertion. He thought there might be relation to excessive cigarette smoking and alcohol. A physician told him that his heart was normal. At first the pain occurred once in a year or two. Gradually the attacks became more frequent. During the past year he had had three or four. With the pain was a mild or moderate degree of palpitation. For the past year he had had difficulty in swallowing and frequent regurgitation of small amounts of food at the end of a meal. The food seemed to remain and return from low down in his throat in the region of the substernal fossa. He had to wash his food down with quantities of liquids. For a year he had had an increasing sensation of something sticking in his throat at this point. Six weeks before admission he began to have dry rasping cough, not relieved by treatment for a cold. The attacks lasted sometimes as long as three hours. During them inhalation was difficult and was accompanied by a whistling sound. Four weeks and a half before admission he began to have dyspnea on exertion and orthopnea, increasing steadily. Ten days before admission after gargling a solution of Sloan's liniment he was unable to speak for two days. Since that time he had been hoarse. During the past six weeks he had had no precordial pain or palpitation. He had grown increasingly weak and had headache and soreness throughout the chest following attacks of cough. Records of the Out-Patient Department show that at an examination in the Throat Clinic June 14 the left cord was found fixed in the cadaveric position. The right cord moved freely. In the Medical Department examination showed brassy cough, tracheal tug, diffuse pulsation and flatness to percussion over the left upper chest in front. X-ray examination June 20 showed the right lung field clear in the anteroposterior view of the chest. There was fairly homogeneous dullness involving the upper two-thirds of the left chest with elevation of the diaphragm on the left. In the oblique view there was seen to be a large mass extending posteriorly, apparently continuous with the shadow of the mediastinum. No pulsation could be made out.

His mother died of abdominal tumor.

He had occasional "rheumatic" pain for twenty years up to the age of twenty-eight. From the age of sixteen to twenty he had frequent nosebleeds on exertion. At eighteen he had gonorrhea, complicated by gonorrheal arthritis. He denied symptoms of syphilis. The only possible resistant sore followed a blow on the leg. This remained open on and off for three years until a doctor made an incision and squeezed out a semi-hard mass the size of a pea. The lesion then healed promptly. Ten years before admission a truck ran over his chest, fracturing three ribs. Seven years before admission he fell on his back on the ice and was lame for a while. He had always been a free liver, drinking and smoking heavily. He had had delirium tremens following brief periods of enforced abstinence. For years he had had at times numbness and tingling of the finger tips, responding to massage and exercise. For ten years he had had cramps in the legs which made him get out of bed and stand on his feet. Two years ago he weighed 156 pounds, his best weight, six months ago 152 pounds. His present weight was 139 pounds.

Clinical examination showed a well nourished man sitting up in bed, slightly dyspneic and cyanotic. Voice slightly husky. Breathing at times stertorous, then quiet. On lying down he had dry hacking cough. Moderate pyorrhea. Tracheal tug. Over the left clavicle was a prominent vein. Lungs signs as shown in Figure 1. The left border of the heart was obscured by dullness, as shown in Figure 2. There was a change in the percussion note in the fourth and fifth interspaces as noted. Sounds good at the apex. Pulmonic second accentuated. Aortic second markedly diminished. A loud systolic bruit, loudest along the right border of the sternum and transmitted over the right chest. No diastolic heard. An occasional extrasystole. Slight capillary pulse. Blood pressure at admission, right 126/92, left 122/90; the day of death 140/80. Abdomen and genitals negative. Moderate varicosites. A brownish papule the size of a pea on the left calf. Prostate symmetrically enlarged by rectal examination. Pupils normal. Reflexes active.

Urine normal. Blood: 10,400 to 22,600 leukocytes, 71 per cent polymorphonuclears, hemoglobin 80 per cent, reds 4,800,000. Hinton and Wassermann tests negative. Two more Wassermann tests done at the State Laboratory were negative.

Temperature 98° to 101.1°. Pulse 75 to 120.

Respirations normal except for a terminal rise to 32.

X-ray examination showed that the antero-posterior view of the chest had not changed since the previous examination. There was no evidence of obstruction in the esophagus either to fluids or semisolids. There was, however, very marked backward displacement of the esophagus.

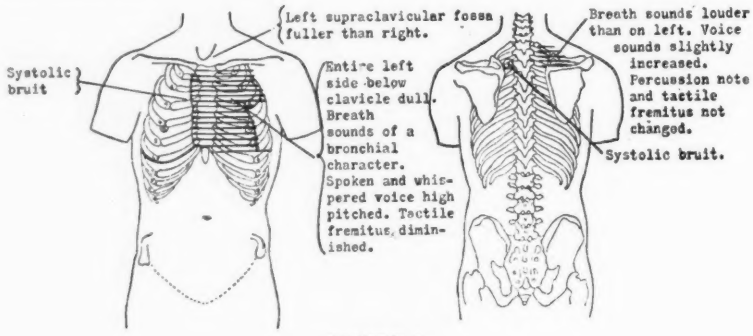
Left supraclavicular fossa fuller than right.
Systolic bruit
Entire left side below clavicle dull. Breath sounds of a bronchial character. Spoken and whispered voice high pitched. Tactile fremitus, diminished.
Breath sounds louder than on left. Voice sounds slightly increased. Percussion note and tactile fremitus not changed.
Systolic bruit.

FIGURE 1.

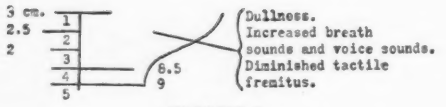

FIGURE 2.

A throat consultant reported, "There is no obstruction in the trachea or larynx. The cause of obstruction is below the trachea."

A surgeon advised against operation.

The cough became worse. June 27 chest examination showed prolonged expiratory sounds and rhonchi. The night of July 1 the patient was wretched, with extreme dyspnea, cyanosis and occasional cough. The following day it was necessary to keep him under morphia. He gradually declined and died that night.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE PHYSICAL EXAMINATION

Will you demonstrate the X-ray plates, Dr. Holmes? It ought to be aneurysm. I hope they will show it.

Dr. George W. Holmes: The plates show a very definite variation from the normal in an area occupying the greater part of the left lung field. A number of interpretations could be made. There are many interesting things in connection with them. In some of these plates you can see that the trachea is displaced away from the lesion. The diaphragm is high on that side. In the oblique view the mass extends back to the posterior part of the chest and the surrounding structures displaced by it. Displacement of the trachea can occur in tumor, and the displacement is usually away from the tumor. The high diaphragm on the left side would suggest interference with the passage of air into the lung or incomplete expansion of the lung from some other cause. The best explanation in this case is that there is pressure on the bronchus preventing the air from entering it. A little farther along in the record it is stated that there was no compression or deformity of the esophagus but that the esophagus was displaced. So that we have still further evidence of a mass displacing the mediastinal contents. The mass itself was of increased density, sharply outlined, and seemed to correspond with the upper lobe. There is no evidence of cavity formation. The opposite lung is apparently normal.

Dr. Cabot: What makes it look so black?

Dr. Holmes: It is an overexposed plate to bring out the density of this tumor and there is insufficient light behind it.

A Student: Where is the heart shadow?

Dr. Holmes: That again is absent, due to overexposure. Perhaps in this other plate you can see it better. You can see the right border of the heart quite well, and less distinctly the left border. The upper part is hidden by the tumor mass. There is no evidence in that plate that the heart is enlarged to one side or the other. This film is not a true lateral view, but the mass seems to be posterior rather than anterior. There is no evidence of disease of the bone so far as we can make out. We have to interpret the shadow as a mass involving the upper lobe of the left lung and the mediastinum and displacing the trachea and esophagus.

Dr. Cabot: And compressing the bronchus.

A Student: Was a fluoroscopic examination made on this patient?

Dr. Holmes: Yes.

A Student: Did the mass pulsate?

Dr. Holmes: There is no record of that here.

A Student: Is there no connection of that mass with the aorta?

Dr. Holmes: I wish I knew. I am not sure of that. The question of pulsation is not very important. You are trying to differentiate between aneurysm and tumor. That is where the whole question lies. In the observation of the absence or presence of pulsation X-ray is very unreliable. It is very difficult to determine whether or not you have pulsation. Again, a tumor mass overlying the great vessels will often pulsate. We do not distinguish between transmitted and expansile pulsations. We see the

mass only in one plane. Sometimes we can see the normal aorta above or below it. The same thing is true in tumor. Sometimes you can distinguish the shadow of the aorta from that of the tumor; but you cannot do that here. The tumor extends into the apex of the lungs. You would not expect an aneurysm to take on the form of the chest. There is no evidence of anything wrong with the ribs. We could not say that this shadow was not due to aneurysm but to collapsed lung, and that the aneurysm was not so large as the shadow. I do not think we can make the diagnosis from the X-ray alone, although my guess is that it is tumor and not aneurysm. He has had a little trouble with his esophagus, and tumors of the esophagus frequently extend into the lung.

DR. CABOT: The description of the sore on the leg does not sound like a syphilitic lesion.

Three ribs were fractured. We ought to see evidence of them.

If the tactile fremitus was diminished I believe the spoken and whispered voice was diminished too. If you can feel it you can hear it too.

The sounds are in the front and back of the chest, although the X-ray shows the mass going backward. I do not understand the diagram. I do not know what these measurements refer to or what that line is.

They have no right to have a capillary pulse with a pulse pressure so low as that. I doubt that. We do not get any evidence there of a syphilitic lesion in the heart. In the aorta we have evidence of aneurysm without anything in the heart. There is nothing in the heart to back it up. There is nothing else recorded that would make us think of a tumor there. It is all negative evidence so far against aneurysm.

Of course that report of the throat consultant is all there would be if it were aneurysm. That does not help us any.

The surgeon was a wise man to advise against operation.

DIFFERENTIAL DIAGNOSIS

I do not see why we should consider more than two things, the two things Dr. Holmes has mentioned. We have to decide between aneurysm and lung tumor. He is at the perfectly proper age for either disease. He is also of the sex in which aneurysm is commonest and in which malignant disease is just as common. I do not know what to make of those early symptoms. They suggest angina, but that does not help me particularly in this differentiation with which we are concerned. He comes in with signs of intrathoracic pressure, first esophageal, later pulmonary. I do not know that we ever get beyond that. There is no evidence of pulsating tumor. With anything so extensive as this we should certainly expect pulsation if it were aneurysm. There is no evidence of erosion of the ribs forward or backward. The symptom of paralysis of the vocal cords goes more often with aneurysm than it does with tumor. Of course the cough goes with any sort of pressure. That does not help us. Dr. Holmes has already said all that I have to say about the fact that the apex of the lung is involved. Aneurysm itself is not at all likely to go up there; but if it compressed the bronchus and collapsed the lung, disease of the lung itself might go up there. So that in itself does not rule out aneurysm.

A STUDENT: Do you think that any X-ray which is dense enough not to show a heart shadow would show an atelectatic lung? It does not show the heart shadow, but shows what might be an atelectatic lung.

DR. HOLMES: I do not think that is a sound explanation. The reason that the lungs showed in the first plates is that they were filled with air. If you removed the air completely from the lungs they would have the same density as the chest wall. The lung with the air out of it is just like the liver or the heart. One reason that the heart does show in the first plates, although it may be of the same density as the tumor, is that there is a good deal of lung around the heart, so that the rays can go through that part more easily. It might also be overexposed. In the upper part of the chest you have no air. I still think it could be collapsed in spite of that, although it is much easier to explain it by a tumor.

DR. CABOT: I believe all aneurysms are syphilitic. There is not a bit of evidence of syphilis in this case. On the other hand you can have it without any such evidence. He is alcoholic, and many alcoholics have had syphilis without ever finding it out. We are apt to think it is more probable in that class of people. But certainly the absence of evidence of syphilis in the repeated Wassermanns and Hintons is queer.

A STUDENT: Is the difference in blood pressure any evidence of aneurysm?

DR. CABOT: It sometimes is. I should not say there was much difference here. No one can read any closer than that.

A STUDENT: Are anginal attacks consistent with aneurysm?

DR. CABOT: Yes, but not suggestive of it.

A STUDENT: How about the pulsations in the left upper chest?

DR. CABOT: My impression is that you get that in either tumor or aneurysm. I should like to ask Dr. Holmes if you could get a diffuse pulsation either way.

DR. HOLMES: I do not know about that.

DR. CABOT: A heart could pulsate through a tumor or through a solidified lung in this way.

A STUDENT: Would you consider a diverticulum of the esophagus?

DR. CABOT: I should say no. It seems to me they would have picked it up in one of the X-ray examinations.

A STUDENT: Is not his red count extraordinarily high for malignant disease?

DR. CABOT: No; you get no anemia in tumor sometimes; also you get anemia in aneurysm every now and then. I believe we had a high red count in a recent case that was full of malignancy. The case with carcinoma in the lung, brain, kidney and adrenals if I remember showed a normal red count.

A STUDENT: What are the numbness and tingling due to?

DR. CABOT: They might be due to alcoholic habits.

A STUDENT: Does the systolic murmur help?

DR. CABOT: It does not help us. We can get it in a normal heart or with a variety of conditions at his age. It is not in any way characteristic of aneurysm.

A STUDENT: A murmur heard to the right of the sternum?

DR. CABOT: Yes, it is very common.

A STUDENT: It was also heard in the back.

DR. CABOT: Yes. It does not help me, though.

A STUDENT: Would that together with the diminished aortic second sound suggest aortic stenosis?

DR. CABOT: Yes; but you might get that in aneurysm. Aortic stenosis is perfectly possible, but I do not think it can help in this case.

A STUDENT: Can the loss of weight be accounted for?

DR. CABOT: I do not know that we have it.

A STUDENT: Would it not favor aneurysm?

DR. CABOT: It is just as common in aneurysm as in tumor.

A STUDENT: Is the leukocytosis important?

DR. CABOT: That does not help us much, because he probably had a lung infection and a low grade pneumonia anyway, and that would account for leukocytosis.

I think I will say tumor. Let us take a vote. How many think it is aneurysm? (Three-quarters of the class.) How many think it is tumor? (One-quarter.) The aneurysms have it so far as the vote is concerned.

X-RAY INTERPRETATION

The findings suggest a large aneurysm, probably rising from the arch and first portion of the ascending aorta and producing some collapse of the left lung.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Aneurysm of the descending aorta.
Bronchial obstruction.

DR. RICHARD C. CABOT'S DIAGNOSIS

Tumor of the lung.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Tumor of lung, type undetermined.

2. *Secondary or terminal lesion.*

Prostatic hyperplasia.

DR. TRACY B. MALLORY: The man had a large tumor which involved the entire left upper and middle lobes and also the whole of the anterior mediastinum, the anterior surface of the pericardium, and the area that normally would have been occupied by a thymus gland. It invaded through the pericardium, and the latter was filled with almost pure blood, 300 cubic centimeters in amount.

That is about as far as I can go. What the tumor was I have not the faintest idea. The cells were undifferentiated. On the whole I think they do not look like those of a lymphoma, and I am inclined to think that the tumor was not primary in the thymus. Most thymic tumors are lymphomatous, although carcinomas and teratomas are also found. The cells might be very undifferentiated epithelial cells, but I do not feel too sure of that. The tumor was growing very rapidly and invading very diffusely, and along the periphery you could see the tumor cells invading the alveolae and filling them, without involving the alveolar walls. The picture suggests a pneumonic exudate consisting of tumor cells only.

A STUDENT: Was the tumor primary in the lung?

DR. MALLORY: It must have been primary somewhere between the mediastinum and the lung, probably the lung, although I do not feel sure. It had compressed the left bronchus very markedly.

The only other pathologic finding was a moderate degree of prostatic hyperplasia.

CASE 15392

SHOULD YOU HAVE MADE THE SAME MISTAKE IN THIS CASE?

SURGICAL DEPARTMENT

This case is of interest because an adequate history in the first place would have avoided a wrong diagnosis and saved the patient much discomfort.

A married Italian woman thirty-two years old entered April 18 through the Emergency Ward. The chief complaint was apparently pain in the pelvis. Owing to the lack of an interpreter the only history obtainable at this time was that she had had pain in the lower abdomen for the past month.

The clinical examination showed a well nourished woman. There were many small, hard, shotty cervical glands. The heart action was regular. There was a systolic murmur at the apex. The lungs were clear. The right breast showed subcutaneously a firm, bulky, tender mass. The left breast was not so full. The abdomen was full, with voluntary spasm on at-

tempt to palpate the lower portion, which seemed fuller than the upper part. There was tenderness all over the pelvis. Pelvic examination showed a very tender, rounded, quite firm mass filling the whole pelvis and forcing the cervix up behind the symphysis. The fundus could not be made out. Examination was difficult on account of the great tenderness.

At this time the temperature was 101°, the leukocyte count 14,700. The urine showed sugar, and under medical advice a course of insulin was given.

Discussion

BY A. WILLIAM REGGIO, M.D.

In view of the scant history and pelvic examination above, the most likely diagnosis that comes to mind is that of pelvic abscess. We have the increased temperature, the leukocyte count plus great tenderness in the pelvis, and a bulging mass in the posterior cul-de-sac. It seems justifiable under these circumstances to make this diagnosis, and as the patient seemed very uncomfortable it was considered wise to bring down the blood sugar and prepare for a vaginal puncture as soon as possible. This it was safe to do on April 20, when the patient was anesthetized for the purpose of an ether examination and presumably drainage of a pelvic abscess in the usual manner.

On examination, however, this mass in the pelvis felt distinctly more cystic and seemed posterior to an enlarged uterus the fundus of which could be felt halfway to the umbilicus, almost entirely on the right side. Bimanually the hands could be touched readily in the left vault without demonstrating any pathology. It was not felt that the first diagnosis was wrong, and a tentative diagnosis of either extra-uterine pregnancy or ovarian cyst was made; and as there was no permission to open the abdomen the patient had to be returned to bed.

Further History

Directly after this examination the temperature shot up to 104°, coming down again next morning. The abdomen became soft and not tender except on the right. April 23 the blood sugar was 77 milligrams, the Hinton test negative.

By this time a more complete history was obtained, which tended to confirm the second diagnosis made after the ether examination. This complete history is as follows:

She had had this pain, sometimes sharp and stabbing, sometimes dull, at intervals for the past month. Since its onset she had not been able to work. It did not affect her appetite until a week before admission. Her bowels always were constipated, moving only every other day. They had been neither better nor worse since the illness began.

She had had six children, the youngest ten months old. After the birth of this child she did not menstruate until February. Then she menstruated twice, the second time ten days after the first, with considerable flowing and a good many clots. A month before admission she began to menstruate, and since that time she had been flowing off and on almost continuously without any effect upon the pain.

For the past month there had been some burning at urination.

Family history unimportant.

Past history negative except for boils in childhood and occasional headaches.

Further Discussion

By this time permission had been obtained to do a laparotomy. It was now felt that our diagnosis of either extra-uterine pregnancy or ovarian cyst was probably correct,—favoring rather strongly the extra-uterine diagnosis. We can see here how easily the mistake was made in the first place because of the absolutely inadequate history. It seems as if we should have been a little less hasty in deciding on a diagnosis of pelvic abscess without further history.

Further History

Operation was done on April 24.

PRE-OPERATIVE DIAGNOSIS

Extra-uterine pregnancy or ovarian cyst.

OPERATION

Gas-ether. Exploration of the abdomen through a midline suprapubic incision revealed a large tubo-ovarian mass connected with the right tube and ovary containing a large amount of old blood clot. The omentum was stained with blood and the pelvis filled with old blood clot. This was scooped out, the tube and ovary were freed, and a right salpingo-oophorectomy was performed. The appendix was not seen, nor was it looked for, as it was felt that in this type of operation it was wiser not to remove it. The left tube and ovary were normal. The uterus was slightly enlarged and soft. The abdomen was closed without further delay.

PROGRESS NOTES

April 29 the abdomen was soft and not tender. There was no systemic reaction following the operation, and no distention. By the 29th she was voiding well. By May 6 the wound was clean and well healed, the patient comfortable. Convalescence was quite uneventful and normal. She was discharged symptom free on May 12.

PATHOLOGIC REPORT

A tubo-ovarian mass 8 by 5 by 4 centimeters in size. The tube and ovary are extensively adherent and injected. The tube is distended

and filled with clotted blood. The ovary is edematous and contains several small cysts.

A microscopic examination of the walls of the tube shows marked fibrosis and a marked chronic inflammatory infiltration. A few chorionic villi and decidual cells are seen in the blood clot. A single well defined tubercle is seen on the serosal surface in one section of the ovary.

Tubal pregnancy.
Chronic salpingitis.
Tuberculosis of the ovary.

FURTHER DISCUSSION

To repeat, this case shows that the history is frequently a very important adjunct to making a diagnosis. We all know this, yet frequently we like to make up our minds as to the diagnosis, going ahead on that basis, only to find that we are wrong. Had this case been turned over to a house officer for operation the chances are that this patient would have had a vaginal puncture done, and the very unsurgical procedure of draining an extra-uterine pregnancy in this manner would have taken place. That is the sole reason for bringing up this case.

DIAGNOSIS

Extra-uterine pregnancy (right tubal).
Chronic salpingitis, right.
Tuberculosis of the right ovary.

THE MANUFACTURE OF FUSED QUARTZ WINDOW GLASS

The importance of ultra-violet rays of the sunlight to health and the fact that ordinary window glass cuts out all of these beneficial rays has long been recognized and several years ago Professor Elihu Thomson, director of the General Electric's research laboratory at Lynn, Mass., took up the work of developing a material to replace window glass which would transmit the health rays. Fused quartz was known as the best medium for the purpose but to make window panes of it was a problem that required years to solve. The difficulties of making quartz windows can be appreciated when it is realized that the melting point of quartz approaches a temperature of 3200 degrees Fahrenheit, about three times that of glass, and is extremely viscous, or thick, instead of being a mobile liquid. Many methods were investigated and special furnaces were developed before the General Electric Company engineers finally succeeded in making quartz in sheet form, and at a reasonable cost.

One of the first methods developed to produce a high quality quartz window glass consisted in fusing, in a vacuum, specially selected and treated quartz crystals in a square fabricated graphite box, and pressing the fused mass of quartz at 1000 pounds per square inch while in the molten state. A block of quartz 8 by 5 by 5 inches was thus obtained. This block when cooled was sliced into sections ⅛ inch thick and each pane was ground and polished by hand. This method of manufacture was considered too expensive for average use, and further research was carried on to get a satisfactory quartz window that would be sufficiently reasonable in cost so that the benefits of fused quartz could be available for more general use. This additional development work resulted in an entirely new process which cut the cost of manufacture to about one-fifth of previous costs and made it feasible to use quartz in large solariums.

In the present process, quartz crystal, crushed to ¼ inch mesh, is fused in a vacuum on flat graphite discs between thin graphite slabs in the form of a square 7½ by 7½ inches. A number of these trays are stacked in a form and placed in a high temperature furnace. When the quartz is fused, nitrogen gas is admitted to the furnace at a pressure of 150 pounds per square inch to compress the bubbles. The resulting quartz plates upon cooling require only squaring of the edges by grinding. The plates themselves are 7½ inches square by ¼ inch thick. This new method does away with cutting, grinding and polishing each pane, and the trays can be used a number of times.—*News Bureau of the General Electric Co.*

PSYCHIATRIC CLINICS FOR CHILDREN LISTED

A list of psychiatric clinics for children in the United States has been compiled by the Children's Bureau, Department of Labor, and will soon be published, according to an oral statement made by the chief of the Children's Bureau, Grace Abbott, Sept. 13. The purpose of the compilation is to make available the location of clinics offering examinations of this kind for children. The statement follows in full text:

This list of psychiatric clinics for children will enable those interested to determine the available resources in any given locality. Inclusion in this list carries no implication regarding the quality of work done in the clinic, and it is in no sense an "approved" list, but is merely a guide to the location of clinics offering psychiatric examinations for children.

The list is a result of a thorough search which terminated about Apr. 1, 1928, and does not include any clinics since that date. The list was prepared by Clara Bassett of the division on community clinics of the National Committee for Mental Hygiene, under the supervision of Dr. George S. Stevenson, director of that division.

In addition to the organizations listed here, there are psychiatrists in private practice, a list of whom for any locality can be obtained from the National Committee for Mental Hygiene or the American Psychiatric Association.

The New England
Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

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SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 126 Massachusetts Avenue.

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Communications should be addressed to The New England Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.

PUBLIC HEALTH AND THE PHYSICIAN

THERE is at times evidence of a certain amount of irritation on the part of individual members of the practicing profession at the activities of those whose specific duties it is to care for the public health; to advise and warn concerning communicable diseases; to ferret out industrial hazards; to protect the individual, so far as possible from the dangers incident to gregarious living, and to make the populace "health-minded". The practicing physician sometimes feels that his preserves are being encroached upon by these activities; that the State Department of Health, for instance, is invading his bailiwick.

Such a conception of the health rights of the people is so obsolete as to be startling when it makes itself known. It is a discordant note in the symphony of progress. No man, whether he be physician or otherwise, has his name branded upon a group of patients. His methods are not patented, nor can his philosophy of health be copyrighted. It is a narrow-minded viewpoint, a petty attitude which can allow a man to take offence at any reputable agency which is working towards the same goal for which he, himself, should be striving. We are not hoarding practice; we are not exploiting our patients; we are not following our profession solely as a gainful trade; we have a definite ideal of service ahead of us, and we are ready to welcome any co-öperative effort which is being made to help us attain that ideal. If we are to make the most of our opportunities, however, to help us keep our profession above the level of a trade, we must ourselves be co-öperative.

A health department is not trying to practice medicine; it has plenty of troubles of its own, not the least of which are based on the critical attitude of a few private practitioners who see, in each of its efforts to help them, an intrusion on their rights. These men are behind the times. They seem to be bigoted or at least selfish, but certainly they are shortsighted, for improved public health will increase rather than lessen their opportunities if they will keep abreast of the times and fall in line.

It is true, they may have fewer typhoid cases to care for and their opportunities for standing futilely by to watch a child die of diphtheritic myocarditis may be lessened, but if they are willing to replace these opportunities for those of giving typhoid vaccine and toxin-antitoxin in their offices, they will find the department of health their best friend. They will find themselves making health examinations and instructing in the principles of hygiene more often, even if their night work falls off, and this newer and more comfortable type of practice will come partly as a result of the education which public health agencies are giving the public.

Jealousy, suspicion and resentment in the physician are his worst enemies. The public health agencies of the State are his best friends and he will go farther and do better work if he makes himself an unofficial representative of them.

ARE DOCTORS BLAMEWORTHY?

REFERRING to a "sweeping probe of motor insurance" the press has made public the probability of investigation of cases indicating mulcting insurance companies by means of claims faked through connivance of physicians and lawyers.

At various times doctors have been charged with irregularities in connection with alleged injuries but these statements have rarely been specific.

The correction of improper behavior cannot be brought about unless facts are submitted.

In order to eliminate irregular practice of doctors, the State has created a Board that has been in existence for thirty-five years and which has acted promptly in dealing with complaints of alleged misconduct by physicians.

If this criticism referred to above is founded on fact it is remarkable that insurance com-

panies have not presented this evidence before the state board. Disciplinary action would accomplish very much in preventing fraudulent connivance with fakirs.

The Massachusetts Medical Society stands ready to deal with any unethical conduct of its members.

It is probable that if aggrieved parties will take advantage of action by the state board or in appropriate cases, if such exist, of the Massachusetts Medical Society there would be less occasion to make disparaging statements of doctors. Whenever alleged fraud on the part of doctors is charged the person should be urged to put the facts before the Board of Registrations in Medicine.

If doctors are blameworthy the ways are open for the correction of abuses.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

ELTON, NORMAN W. A.B., M.D. Boston University School of Medicine, 1926. Diplomate of the National Board 1929. Research Fellow in Pathology, Detroit College of Medicine, Detroit, Michigan. His subject is: "Icterus Index Studies in Lobar Pneumonia II. Relationship of the Icterus Index Curves to Crisis and Fluid Pleural Exudates." Page 611. Address: Detroit College of Medicine, Detroit, Michigan.

WARD, ROBERT DEC. A.B., A.M. Instructor in Climatology, Harvard, 1896-1900. Assistant Professor of Climatology, 1900-1910; Professor of Climatology, 1910-. Fellow Royal Meteorological Society (London); Fellow American Meteorological Society (President 1920-21). His subject is: "The Acclimatization of the White Race in the Tropics." Page 617. Address: 37 Fayerweather Street, Cambridge, Mass.

JONES, FRED DURGIN. M.D. Tufts College Medical School, 1913. Pathologist. Medical Examiner of Hampden County, Second District. His subject is: "An Unusual Case of Matricide." Page 628. Address: 20 Maple Street, Springfield.

CANAVAN, MYRTELLE M. M.D. Woman's Medical College of Pennsylvania, 1905. Curator, Warren Anatomical Museum, Harvard University Medical School; Associate Professor of Neuro-pathology, Boston University Medical School; Instructor in Neuro-pathology, University of Vermont College of Medicine. Her subject is: "Embolism as a Causative Factor in Death." Page 630. Address: 240 Longwood Avenue, Boston.

WITHINGTON, PAUL R. A.B., M.D. Harvard, 1916. Assistant Physician, Children's and Infants' Hospital; Visiting Physician, Milton Hospital, Milton. His subject is: "Report of a Case of Tularemia." Page 634. Address: 350 Randolph Avenue, Milton.

The Massachusetts Medical Society

STATED MEETING OF THE COUNCIL

A STATED meeting of the Council will be held in John Ware Hall, Boston Medical Library, 8 The Fenway, Boston, on Wednesday, October 2, 1929, at twelve o'clock, noon.

Business:

1. Minutes of last meeting in abstract.
2. Reports of Standing Committees: Of Arrangements, on Publications, on Membership and Finance.
3. Reports of committees appointed to consider petitions for restoration to the privileges of fellowship, also appointment of committees to consider new petitions.
4. Appointment of Auditing Committee.
5. Appointment of delegates to United States Pharmacopoeial Convention at Washington, D. C., May 13, 1930.
6. Reports of delegates to House of Delegates, American Medical Association, and to meetings of the New England State medical societies.
7. Fill vacancy in Standing Committee on Membership and Finance caused by the death of Samuel Crowell.
8. Fix amount of annual assessment for Resident Fellows and Non-Resident Fellows for the year 1930.
9. *Incidental Business.*

WALTER L. BURRAGE,
Secretary.

Brookline, September 25, 1929.

Councilors are requested to sign one of the attendance books before the meeting.

IMPORTANT NOTICE

Arrangements have been made for moving the offices of the NEW ENGLAND JOURNAL OF MEDICINE and the Massachusetts Medical Society to 165 Newbury Street, which will take effect within the next ten days. Please make a note of this change in order to avoid confusion.

MISCELLANY

THE THIRTEENTH INTERNATIONAL PHYSIOLOGICAL CONGRESS

(Continued from page 604, issue of September 19)

"The Absorption of Fat" was reported by Dr. Frederick Verzar of Debrecen, Hungary. The reaction of the small intestine is slightly acid or neutral. At this reaction the higher fatty acids cannot exist in the form of soaps. The supposition that the fats are absorbed in the form of soaps can therefore be omitted. So there is a necessity of a new explanation of fat absorption. Both taurocholic and glycocholic acids combine in watery emulsions with the higher palmitic, stearic and oleic acids. The resulting combination product dissolves clearly in water, even at

pH 6.25 and diffuses without difficulty through parchment membranes. This explains the importance of the bile acids, since in the form of such combinations the fatty acids are absorbed even at the acid reaction of the intestine. The combination of glycocholic and taurocholic acid with fatty acids is molecular; in greater concentrations there exists, however, also greater aggregates. This was shown by measuring those quantities of bile acids which combine with fatty acids and by the nephelometric analysis of these solutions. Diffusion experiments show that in very diluted solutions nearly all of the fatty acid is diffusible, while in concentrated solutions only a part of it. Through fractioned diffusion it was possible to get out all diffusible fatty acid. Whereas the fatty acids became diffusible, on the other hand the diffusibility of the bile acids decreases. Fatty acids in finest emulsions do not diffuse at all. All neutral fats in finest emulsions do not diffuse even if glycocholic acid is present. The polydisperse nature of the fatty acid solutions with glycocholic acid was also shown by ultrafiltration. The stalagmometric analysis of these solutions agrees also with the assumption that these are real molecular combinations existing in neutral and even in acid solutions. It is only this action of glycocholic and taurocholic acid on the fatty acids which makes the absorption of fats possible and explains it under physiological conditions.

Dr. M. O. Lee of Boston studied some of the effects of long continued insulin administration. He investigated the effects on voluntary activity, blood count, growth, heart rate and oestrus cycle. Insulin was injected twice daily in dosages of 0.1, 0.5, and 1.0 units per 100 grams of body weight. Voluntary activity was measured by the revolving cage method with twenty-five rats. Two periods of one month each with insulin were alternated with two periods of one month without. The voluntary activity was slightly increased during the periods of insulin administration. In twenty rats blood examinations, consisting of erythrocyte, leucocyte and differential leucocyte counts were made. The only deviation in the insulinized rats was a slight increase in eosinophile cells. Growth was slightly accelerated during the first four months of life in a series of sixteen insulinized rats as compared with controls. The heart rate in ten insulinized rats averaged ten per cent. lower than the rate in normal animals, when determined twelve or more hours after the last doses of insulin. In normal rats the administration of insulin in doses sufficient to produce convulsions, caused within two hours a decrease of fifteen to twenty per cent. in the heart rate. The decrease was abolished by atropine. These results were due probably to the stimulation of the parasympathetic system by insulin and point towards an antagonistic relation of adrenalin and insulin. The oestrus cycles in insulinized rats were found to be normal, both as to the total duration of the cycles and the duration of the component stages.

Drs. George T. Pack and Donn Barber of New York investigated "The Placental Transmission of Insulin from Foetus to Mother". According to these scientists insulin in transmitted through the placenta from the foetus to the mother as determined by variations in maternal blood-sugar levels following intrafetal injections of commercial insulin. The experiments were carefully controlled by previous determinations of glucose tolerance under the same conditions.

Studies on "Asphyxia as an Agent of Hypoglycemia" were made known by Dr. J. Puche-Alvarez of Barcelona. The action of asphyxia as a stimulus to hypoglycemia is well known. The mechanism through which this effect is produced appears definitely to involve a double mechanism, both humoral and nervous. The nervous effects are conveyed to the effector organs through the splanchnic nerves. Dr. Puche-Alvarez's work had the purpose of determining what would happen to the blood sugar after interrupting the continuity of the splanchnics. I. He determined the effect of asphyxia on the blood sugar under fasting conditions in dogs anesthetized by choralase and after sectioning the splanchnics in the thorax below the cardiac branches. Under these conditions asphyxia produces a lowering of the blood sugar manifested fifteen to thirty minutes after the stimulus. II. In another series he performed hepatic denervation. This intervention did not alter the hypoglycemic effects of asphyxia. III. To exclude the cardiac agent, asphyxial bradycardia, he sectioned in another series of experiments the pneumogastric fibers which lead to the heart. Under these conditions asphyxia produced hypoglycemia also. IV. In order to find out whether the asphyxial stimulus liberated some substance of pancreatic origin, he used the method of the jugular-pancreatic anastomosis, joining the pancreatic vein of a dog, submitted to asphyxial stimulation, with the jugular of another dog in a fasting condition anesthetized with choralase. He was able to determine in a number of cases the hypoglycemic effect thus transmitted by humoral means. V. The section of the splanchnics in the receiving dog made the hypoglycemic effect longer than in dogs with intact splanchnics. Asphyxia was produced by obstruction of the trachea for one minute, with intervals of one to two minutes. In the experiments of anastomosis pancreatic blood was allowed to pass during fifteen minutes.

"Nitrogen Metabolism in Severe Diabetes" was studied by Dr. R. Carrasco-Formiguera of Barcelona. His work was of different types on laboratory animals as well as on human subjects showed that the quantitative disturbance of nitrogen metabolism in severe diabetes, when existing, is a result of the primary disturbance of dextrose metabolism and may be influenced by dietary conditions and by other factors independent of diabetes itself and is neither a result of insulin insufficiency nor an essential feature of severe diabetes.

"Studies of Starch Digestion in Normal and Diabetic Subjects" were conducted by Dr. Sanford M. Rosenthal of Washington, D. C. He found that the rate of digestion of raw starch as measured by the increase in blood sugar, was markedly inhibited by acids. One cubic centimeter of 3.6 per cent. hydrochloric acid will almost completely prevent the intestinal digestion of raw starch for one to three hours. This amount of acid does not affect the rise in blood sugar following glucose feedings in dogs and rabbits. In humans similar findings were obtained with cooked starches which in man caused a rise in blood sugar as marked as though glucose was given, but this is not the case with the ingestion of raw starch. This principle was applied to diabetics and the starch was fed as such, or as raw carrots,

turnips, or nuts. In twelve diabetics the raw starch meal produced in one-half hour an increase of six milligrams of blood sugar, in one hour a decrease of nine milligrams. This decrease was progressive.

"Blood Pressure" was reviewed by Dr. Clyde Brooks of the University of Alabama, with a history of the men who developed this method of study, with descriptions of apparatus and reference to the literature of the subject. Dr. Brooks reported his study of the mechanism of production of sounds in blood vessels of the arm during measurements with analysis of the true significance of sounds and their bearing on the measurements. He explained the principles underlying the operation of the instruments employed and made a critical review of the present state of knowledge of blood pressure measurements.

"Diet and Reproduction" was dealt with by Dr. G. Grigns of Wageningen, Holland. On a diet of cornmeal, peanut or cocoa-meal, hydrogenated arachis oil and a salt mixture of calcium carborate, sodium chloride, potassium biphosphate and ferrosulphate, young rats grow excellently and when mated have normal litters. The second generation grows well except that all males are sterile and show degenerated testes. The females reproduce normally with males on stock diet. On a diet of serum albumen, casein, hydrogenated oil, rice starch, mannite, decitrated lemon juice, McCallum's salt mixture and ostelin nearly all females are sterile; the males on the contrary appear fertile with stock-fed females. On a ration of serum, albumen, casein, hydrogenated oil, rice starch, mannite, decitrated lemon juice, McCallum's salt mixture and an extract of carrots, fertility was almost normal but none of the females could rear its young. On a ration of whole wheat meal 250, wheat starch 125, hydrogenated fat 60, butterfat 15, casein 25, lemon juice 20, salt mixture as in corn food 15, the percentage of young weaned was forty-five per cent. in the first and twenty-five per cent. in the second generation. After the addition of two to four per cent. of serum albumen this was raised to normal. Extraction of the albumen with ether did not increase its effects. From these facts at least three factors controlling reproduction could be postulated: One for spermatogenesis, one for the normal gestation of the female and one for lactation. There were some indications that the latter may depend on the composition of the proteins in the ration.

A very interesting presentation of a new theory concerning sleep which may revolutionize old accepted hypotheses of the workings of the "sleep mechanism" was delivered by its discoverer, Professor W. R. Hess of the Physiological Institute, Zurich, Switzerland. According to him, all the existing hypotheses concerning sleep are unsatisfactory, in that they are not supported by known facts. The researches referred to were intended to supplant hypotheses. After developing a special method in which the kind of electrical impulse and the shape of the electrodes play an essential part, an inhibitory state was induced by electric excitation of a certain part of the brain, thereby exhibiting signs of physiological sleep: correct sleeping position, retention of aural titillation reflex, contraction of the pupils, adequate attitude to waking excitations, and above all the characteristic symptoms. This finding shows that sleep results from excitation of portions of the central nervous system. Another conception is based on the histological control of the brain for the purpose of localizing the parts inducing sleep. These were not encountered in a narrowly confined sleep-centre. Their distribution was regular, however, in as far as they are localized along the axis of the brain and adjacent to the ventricles. In the regulating or functioning influences of these strata on higher brain parts, Dr. Hess recognized some fundamental functional structure of the central nervous system. He pointed out that the effective excitatory parts lie in the same strata with regulatory vegetative functions. The findings become clearer when we perceive as nucleus of the sleeping process not the vegetative, i.e. the extinction of functional potencies, but the positive, i.e., the promotion of restorative processes within the tissue. Since the regulation of interior bodily conditions belongs to the vegetative functions, the sleeping process, judged by its result, is on a level with the vegetative reflex functions.

An improved apparatus, for measuring the circulation in man by means of ethyl iodide, carbon dioxide or other gases, was demonstrated by Dr. Yandell Henderson. The apparatus consisted of a small spirometer from which the subject inspires through the mouthpiece with double valves. The spirometer is slightly over-counterpoised, so that the air flows in through a narrow slit, which is controlled by a micrometer screw. The intake of air is thus measured. The expired air passes to a Woulfe's bottle inside the spirometer which is a mixing chamber. Alveolar air is obtained by automatic sampling, and virtual venous air by rebreathing into the spirometer. The special features of the apparatus are its small size, cheapness, and applicability to use for measuring the circulation in man.

Interesting papers on the physiology of the heart were presented and some having clinical application. One, a study of "Recovery from Ventricular Fibrillation and a Cinematograph Demonstration," was presented by Dr. D. R. Hooker of Baltimore. The film was designed to show a method applying the findings in fibrillating ventricles of the dog to ventricular fibrillation in man. The ventricles having been fibrillated by electrical stimulation, about twenty-five cubic centimeters per kilo of one-half per cent. potassium chloride in one-half per cent. sodium chloride were injected into the central end of the carotid under a pressure of one hundred and fifty millimeters of mercury, which was sufficient to force the fluid into the coronary arteries. The ventricles came to rest. The potassium solution was followed by fifty cubic centimeters per kilo of 0.23 per cent. calcium chloride in 0.9 per cent. sodium chloride with, if required, two cubic centimeters of 1:2000 epinephrin. This replaces the potassium in the coronaries and after a pause, depending upon the time of fibrillation, the heart begins to beat, respiratory activity is resumed and the eyelid reflex returns. Dogs have been saved by that procedure after five minutes fibrillation.

"Alterations in the Left Ventricular Beat Produced by Drugs Limited to the Right Ventricle" were reported by Dr. Carl J. Wiggers. According to him it is assumed that drugs and chemicals affect the ventricular beat only when brought into contact with ventricular muscle through the coronary vessels. He questioned the validity of this assumption because ventricular fibrillation was abolished and a co-ördinated beat was restored by intraventricular injections of potassium iodide and calcium chloride. He

tested the matter by perfusing cats' hearts with Tyrode solution. Langendorff method was employed, except that an elastic chamber was connected with the aortic cannula, thereby allowing the left ventricle to relieve itself by contracting in a natural manner. The inferior vena cava and pulmonary artery were ligated and a cannula was inserted via the superior vena cava into the right ventricle. This offered a method of introducing drugs, and regulating the initial right ventricular pressure and was the only avenue for escape from the right heart, by preventing contact with its external surface. Chemicals and drugs introduced into the right ventricle could enter the coronary orifices or left ventricle directly but were prevented from contact with the exterior heart. Changes in amplitude and duration of the left ventricular pressure oscillations therefore must be attributed to absorption from the cavity of the right ventricle and transportation by way of Thebesian communications. The results obtained were (1)—Changes in initial pressure within the right ventricle are without effect on initial pressure or pressure pulses in the left ventricle, thus obviating the possibility that changes from introduction of drugs are of mechanical origin. (2)—The introduction of epinephrin, ephedrin, strophanthin, quinidine, calcium chloride, potassium chloride, chloral and chloroform into the cavity of the right ventricle caused a stimulating or depressing effect on the left ventricle, which are similar to those of smaller doses introduced via the aorta and coronary system. (3)—Ventricular fibrillation following faradic stimulation and unquestionably of a permanent nature can be promptly abolished by washing the right ventricle with a five per cent. potassium chloride solution and in some cases with Tyrode solution acidified with hydrochloric acid. (4)—Changes in surface negativity of the left ventricle, derived by means of differential electrodes were studied. The conclusions drawn up by Dr. Wiggers were that pharmacologically, the absorption of drugs from the interior of the right ventricle and their transportation to the left ventricle was demonstrated. Physiologically, the importance of the Thebesian communications was extended and through them, substances may be absorbed and distributed to various portions of the two ventricles, not only when the coronary supply fails or is deficient, but also while a natural coronary flow continues.

"The Source of Expired Carbon Dioxide and Site of Its Retention" was explained by Dr. Laurence Irving of Toronto. According to him the eviscerated or overventilated animal gives off more carbon dioxide than that produced by normal metabolism. Conversely, the animal breathing a high per cent. carbon dioxide mixture gives out less. Of the extra carbon dioxide expired or retained only a small amount is accounted for in blood changes. Muscle carbon dioxide changes about as the blood carbon dioxide, but with the larger bulk of the muscles, the amount of carbon dioxide lost or retained is some four times greater. The sum of blood and muscle changes does not account for half of the total lost or retained carbon dioxide. Bones are believed to be available carbon dioxide reservoirs.

Studies on the "Excretion of Lactic Acid During Sport" were reported by Drs. I. Snapper and A. Grunbaum of Amsterdam, Holland. They found that different games affect the excretion of lactic acid.

I. Association football: Duration two periods of three quarters of an hour at Olympic games. A. On warm days, of fifty-five players six excreted more than sixty milligrams of lactic acid in the urine. B. On cold days, of thirty-two players sixteen excreted more than sixty milligrams of lactic acid in the urine. On account of this difference, the question was raised whether on warm days the lactic acid leaves the body in another way than through the urine. Therefore the shirts of sixty-eight players were examined after the match and considerable amounts of lactic acid and choline were found. The total excretion of lactic acid and choline was certainly much greater on warm days.

Further studies were made on participants in rowing, running and swimming contests. The conclusions are as follows:

Lactic acid is nearly always excreted during the exertion incident to sport; the amount lies between one and two grams usually. During short timed exertions the lactic acid is excreted in the urine. During longer timed exertions the lactic acid is excreted only for the smaller part through the kidney but for the greater part through the sweat. Only with long distance swimmers is there always much lactic acid in the urine. This is probably due to impaired inspiration. The concentration of the lactic acid in the urine can go up very high. It often exceeds one per cent. The maximum found was two and seventeen one hundredths per cent. Through the comparison of the above figures with analysis of sweat of resting, healthy and sick persons, it appeared that the composition of working sweat and rest sweat is different. During rest high lactic acid concentration with lower choline concentration was found. During exertion low lactic acid concentrations with high choline concentration was found.

"The Seat of Digitalis Emesis" was studied by Drs. P. J. Hanzlik and D. A. Wood of San Francisco, California. The mechanism of digitalis-emesis was studied in pigeons which have been found useful in bio-assay of the drug. The results were compared and correlated with those in mammals. It was found by these men that the emesis of digitalis in pigeons is peripheral in origin, the action consisting predominantly of a vagus-reflex mediated through local irritation by digitalis concentrated in the liver, other abdominal viscera not being excluded. The seat of emesis is not in the heart, a result which corroborates recently reported results in other animals.

"The Influence of Size of Dosage upon Development of Tolerance to Morphine in Dogs" was investigated by Drs. Carl F. Schmidt and A. E. Livingston of Philadelphia, Pennsylvania. According to these men, a high degree of tolerance is only very slowly acquired when the daily dose is as small as two to ten milligrams per kilo. As long as three months may be required for the development of maximal tolerance to two milligrams per kilo a day, and more than four months for the appearance of maximal tolerance to ten milligrams per kilo daily. On the other hand, with ascending dosage, or with larger doses from the start, twenty-five to sixty milligrams per kilo, maximal tolerance is developed much more rapidly than this. Dogs given a convulsant dose on the first day are distinctly more resistant than normals to the drug but not to the gastrointestinal effects of ten, thirty, or sixty milligrams per kilo upon the next day, and on daily administration of the

same dose uniformly survive to become maximally tolerant in a much shorter time than is possible with any other régime of dosage. The rapidity with which tolerance is acquired therefore seems to depend upon the concentration of morphine in contact with the tissues. But once tolerance has been acquired to from two to ten milligrams per kilo daily, the tolerance prevents narcotic effects of one hundred milligrams per kilo, though the larger dose elicits marked gastro-intestinal effects. Morphine tolerance appears to depend chiefly upon a cellular resistance or immunity, which is objectively demonstrable in blood vessels and medullary centers.

The results of a study of "The Clinical Excretion of Mercury" were made known by Drs. Torald Sollman, H. N. Cole, N. E. Schreiber, J. E. Rauschkolb and J. A. Gammel of Cleveland, Ohio. They studied a variety of mercurial preparations, with different methods of administration. At one extreme they used the inunctions and oral administration, for which the excretion is practically continuous, increasing progressively with the administration.

"Physico-Chemical Studies Upon Antisepsis and Chemotherapy" were reported by Drs. Arthur D. Hirschfelder and H. N. G. Wright. They attempted to learn something about the physico-chemical phenomena involved in the actions of the antiseptic chemotherapeutic drugs. A number of the principle antiseptic dyes usually thought to be dissolved as crystalloids were found to be partly crystalloid and partly in the colloid state, and some which are crystalloidal in pure water, become partly colloidal in physiological salt solution. The diminution in the activity of antiseptics in the presence of proteins is due to adsorption on the protein rather than to chemical combination, but the portion of the antiseptic adsorbed on the protein seems to exert some antiseptic effect as well as does the dye that remains unadsorbed. Mercurochrome injected intravenously in animals stains the blood plasma pink, but this pink plasma will no longer fix itself to yeast or bacteria cells, as does the dye from an aqueous solution; hence the markedly decreased bactericidal action. On the other hand the dyes cause the aggregation of protein particles, which explains clinical toxic reactions.

SURVEY OF CRIME DETECTION AND PREVENTION

A survey of crime detection and prevention in the United States is to be undertaken under the auspices of the Columbia University Law School. The general director of the survey is Dr. George W. Kirchway, formerly dean of Columbia Law School and warden of Sing Sing Prison, at present lecturer on crime and criminology of the New York School of Social Work and chairman of the section on delinquents and correction of the National Conference of Social Work. Dr. W. I. Thomas, author of "The Unadjusted Girl" and "The Child in America," will direct the juvenile-delinquency investigation, and Professor E. H. Sutherland of the University of Minnesota will report on probation and parole and prison administration.—*U. S. Dept. of Labor Bulletin.*

WEEKLY HEALTH INDEX

Telegraphic returns from 62 cities with a total population of twenty-nine million for the week ending Sept. 14 indicate a mortality rate of 10.2 as against a rate of 11.2 for the corresponding week of last year. The highest rate (20.9) appears for Memphis, Tenn., and the lowest (4.9) for Duluth, Minn. The highest infant mortality rate (176) appears for Atlanta, Ga., and the lowest for Duluth, Minn., which reported no infant mortality.

The annual rate for 62 cities is 13.3 for the thirty-seven weeks of 1929, as against a rate of 13.0 for the corresponding weeks of 1928.

A MENACE TO SURGEONS

A bill has been filed in the Massachusetts State Senate for consideration next winter which represents the attitude of some persons toward doctors.

There are seven sections, which are as follows:

(1) A physician shall not remove any organ of the body from a patient without first obtaining the consent of such patient, if an adult, or of the patient's parents or guardian, if a child.

(2) After the removal of such organ, the physician shall show it to the patient's parents or relatives, explaining the necessity of such removal.

(3) Actions of contract or tort for malpractice, negligence, error or mistake, against physicians, may be commenced at any time within 10 years next after the cause of action accrues.

(4) A physician shall not handle or treat a patient in such a way as to cause pain to the patient without first explaining that pain will result from such handling or treatment and obtaining permission therefor from the patient, if an adult, or from the patient's parents or guardian, if a child.

(5) A physician shall not, in treating a patient, act in any manner which would be considered rash and thoughtless if done by a person not a physician.

(6) Any physician called to a patient who has had a complaint against another physician shall give as unprejudiced and kindly treatment as he would if such other physician were not under such censure.

(7) A physician violating any provision of this act shall be punished by a fine of not less than $50 nor more than $500, or by imprisonment for not more than one year, or by both penalties.

The petitioner says she has been a victim of such an operation which was performed without her knowledge and consent, and that her purpose in filing the bill is to protect others from the pain and anguish which have been hers.

The present law permits actions of contract or tort for malpractice, negligence, error or mistake, against physicians, within a two-year period. The bill of Mrs. Brown extends the period to 10 years, for she says there are many cases where patients do not realize what has happened to them until four or five years afterward.

There are so many unusual features in this bill that there is little likelihood of its passage, unless there is more antagonism to medicine among the members of the legislature than we have hitherto noticed.

The bill was filed by Senator James A. Torrey of Beverly on the petition of Mrs. Annie D. Brown of Salem.

RÉSUMÉ OF COMMUNICABLE DISEASE IN MASSACHUSETTS, AUGUST, 1929

GENERAL PREVALENCE

The total number of cases of communicable disease reported for August was about average.

Chicken pox continued to run high, establishing a new high record for the month.

Whooping cough likewise showed a high incidence.

The reported incidence of diphtheria, scarlet fever, German measles, mumps, influenza and lobar pneumonia, was within endemic limits.

Both pulmonary and non-pulmonary tuberculosis were reported with the usual frequency.

The reported incidence of gonorrhea and syphilis, while in both cases twice that of last month, when low records were established in each case, was likewise within endemic limits.

Typhoid fever equalled the low August record established in 1928.

The reported incidence of measles was considerably below the expectancy, virtually reaching the low mark of 1919.

Anterior poliomyelitis established a new low record for August.

RARE DISEASES

Actinomycosis was reported from Boston, 1; Lowell, 1; total, 2.

Anterior Poliomyelitis was reported from Belchertown, 1; Boston, 5; Cambridge, 1; Chicopee, 1; Framingham, 1; Springfield, 1; Westfield, 1; total, 11.

Encephalitis Lethargica was reported from Cambridge, 1; Northampton, 1; Westfield, 1; total, 3.

Epidemic cerebrospinal meningitis was reported from Boston, 1; Fall River, 1; Ludlow, 1; Holyoke, 2; Northbridge, 1; Springfield, 2; Worcester, 5; total, 13.

Malaria was reported from Chelsea, 1; Everett, 1; Holyoke, 1; Marlboro, 1; total, 4.

Septic sore throat was reported from Boston, 6; Chelsea, 1; Fall River, 1; Lowell, 2; Lynn, 1; Malden, 1; total, 12.

Tetanus was reported from Greenfield, 1; Lawrence, 1; total, 2.

Trachoma was reported from Boston, 7; Chelsea, 1; Hanson, 1; Worcester, 1; total, 10.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

	Cases in Entire Population				Case Rates per 100,000 Pop.		
	August 1929	August 1928	Prosodemic Index	Epidemic Index	August 1929	August 1928	Expected Rate***
ALL CAUSES	3331	2794			76.0	64.6	
Ant. Poliomyelitis	11	164	80*	0.1**	0.3	3.8	1.8
Diphtheria	179	172	171*	1.0**	4.1	4.0	3.9
Measles	139	325	466*	0.3**	3.2	7.5	10.6
Pneumonia (Lobar)	76	74	67*	1.1**	1.7	1.7	1.5
Scarlet Fever	199	225	320*	0.6**	4.5	5.2	7.3
Tuberculosis (Pul)	431	379	392*	1.1**	9.8	8.8	9.0
Typhoid Fever	45	45	54*	0.8**	1.0	1.1	1.2
Whooping Cough	528	389	729*	0.7**	12.1	9.0	16.6
Chicken Pox	132	81	-	-	3.0	1.9	-
German Measles	13	10	-	-	0.3	0.2	-
Gonorrhea	518	370	-	-	11.8	8.6	-
Influenza	5	12	-	-	0.1	0.3	-
Mumps	103	59	-	-	2.3	1.4	-
Syphilis	160	125	-	-	3.6	2.9	-
Tuberculosis, O.F.	64	74	-	-	1.5	1.9	-

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

CORRESPONDENCE

TRANSFERS IN THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

September 20, 1929.

Editor NEW ENGLAND JOURNAL OF MEDICINE:

May I announce through your columns the transfer of Dr. Lyman Asa Jones from the position of superintendent of the Pondville Hospital to the Department of Public Welfare. He will be succeeded at the Cancer Hospital by Dr. George M. Sullivan. Dr. Sullivan did excellent work for a number of years in charge of the Chadwick Clinics for the identification of childhood tuberculosis. For the last two years he has been district health officer in the northeastern district and has done an astonishingly good piece of work. He brings to the institution considerable administrative experience and sound clinical ability.

Dr. Sullivan's successor in the northeastern district will be Dr. Wilson W. Knowlton, who has had wide experience in practical public health administration.

Yours truly,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

THE TRANSFER OF NARCOTIC DRUG LICENSES

George H. Crosbie
Clarence T. MacDonald
Parker H. Smith

September 17, 1929.

Editor NEW ENGLAND JOURNAL OF MEDICINE:

During the month of September many Doctors are moving their offices. I find that comparatively few of them realize that their Narcotic Drug Licenses and Books must be transferred within the month that they move.

I have personally taken care of a great many of these but I would like to warn others that this must be done to avoid a fine being imposed.

Yours very truly,

GEORGE H. CROSBIE.

DR. PUSEY'S COMMENT ON AN EDITORIAL

September 14, 1929.

To the Editor:

I have already given my position in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of September 14th, on the use of my name by Procter & Gamble in their advertisements, but I should like to comment briefly upon certain points suggested by the editorial in the NEW ENGLAND JOURNAL OF MEDICINE of September 5.

In the first place, I would emphasize the fact that I, and no other dermatologists, am entirely responsible for this transaction and that any criticism upon it belongs to me. The other dermatologists were asked by me to do two things: First, to pass upon the quality of the soap after full opportunity to judge its quality. They were told that an adverse opinion would be accepted as readily as a favorable one. Second, to co-öperate in the preparation of a statement on the use of soap in the care of the skin. A statement was finally arrived at in which there was agreement. I enclose a copy of that statement which I shall be entirely willing to have you publish if you see fit. It is an unexaggerated, simple statement of the use of soap and water in the care of the skin, and, in the present state of extravagant cosmetics, the statement and its dissemination constitute, I believe, a useful service. The dermatologists were advised by me to take this action on the ground that if physicians want proper medical advertising in matters involving the body they should be willing to co-öperate with advertisers when they come to them for help. That is my opinion of many years and I am not alone in it.

As far as I can judge, there is no ground for your intimation that there is encouragement offered for self-medication in skin diseases, unless the recommendation to wash with soap and water to the extent of keeping clean is self-medication. The other information although it is put in a style that is supposed to appeal to young women, is wholesome general advice of the sort that nearly every person seeks without thought of going to a physician and that I gave in a book for the public seventeen years ago. Rather than encouraging self-medication the statement says: "If the skin cannot stand washing once a day with soap and water a physician should be seen about it", and the advertisers, on their own account, go so far as to suggest in their pamphlet: "Go to a physician for observation, and probable treatment, if any condition of your skin refuses to respond to this daily care"—the reasonable use of soap and water.

The statement on what constitutes a dermatologist I am also solely responsible for. I think it is proper education, useful to the public and to the medical profession. We are constantly fighting and trying to educate the public about irregulars. The other irregulars in medicine are as one tree in a forest compared with the host of people treating minor skin troubles, and calling themselves, or passing in the minds of the public, as dermatologists. Should this thing be beneath our notice? I believe not. It is not a disservice to the public, or to the medical profession, to suggest that there is competent advice for the relief of physical ills of the skin and that it should be sought in the medical profession.

WM. ALLEN PUSEY

November 12, 1928.

STATEMENT ON PROPER CARE OF THE SKIN

Keep the skin clean, if you want to keep it fresh and clear.

There is only one way to keep your skin clean and that is to wash it, with water and soap.

Soap is not medicine—it can do no more than cleanse your skin. But it can do a great deal to keep the skin healthy and attractive by keeping it clean. So do not massage soap into your skin; it certainly does no good; it may do harm. Simply wash your face with a generously lathered cloth.

Wash your face as often as it gets dirty. Be sure to wash it at least once a day—preferably at night. Rinse it with clear, cool water after you use soap, and whenever it needs to be refreshed.

Use cosmetics and creams if you wish. But wash them off each night with warm water and a pure soap.

DRY SKINS

Not one skin in a thousand is so dry that it can be harmed by one washing a day with a good

toilet soap. Soap and water alone can cleanse away the dust and dirt that may prove infectious or otherwise harmful to a dry, sensitive skin.

OILY SKINS

If your skin tends to be oily, you should wash it often with soap and water—three or four times a day is not too much. Soap and water alone can satisfactorily cleanse your face of the excess dust and oil that collect on an oily skin. No oil or cream can cleanse the skin thoroughly.

SUMMER

Wash your face with soap and water, as often as necessary to keep it clean, even if your skin is rather dry. This keeps it fresh and cleansed of all perspiration, dust and the excess oil given off by the pores in warm weather. Don't cover up dirt with powder and rouge—use them only on a *clean* skin. The skin will stand more washing in summer than in winter.

WINTER

Cold air is dry and somewhat irritating and has a drying effect on the skin. If your skin is inclined to be dry, your face should not be washed as frequently in winter as in summer. If your skin is oily, however, you may wash it as frequently as you please, no matter what the weather.

Always dry your face and hands thoroughly in cold weather to prevent chapping. A trace of cold cream afterwards is good if the skin tends to chap.

HARD WATER

If you wash your face with hard water, you will need to use more soap than with soft water. With hard water much of the soap is used in softening the water. Aside from this, there is no special skin treatment necessary with hard water.

WHAT KIND OF SOAP?

The soap which comes directly in contact with your skin at least once a day should be pure, mild and bland. It should be made by careful, experienced, responsible soapmakers for that is your only assurance of its excellence; your only assurance that every cake you buy will be of uniform mildness and gentleness.

APPROVED:

Editorial Comment:

It is with pleasure that Dr. Pusey's reply is published. The accompanying "statement" is admirable. If that were all that appeared with his approval nobody would have been surprised. We are glad to note that no particular soap is mentioned in the "statement." Statements of this character are informative and properly represent the attitude of the medical profession.

We wish that we could see in Dr. Pusey's reply to the criticism of his endorsement of a particular soap a more convincing argument. Perhaps when the soap manufacturers ally their organizations with the medical profession in health propaganda aside from the field of advertising we may be able to tolerate the barter of one's name and position in exchange for reciprocal publicity.

If the general trend of medical ethics is in this direction as indicated in Dr. Pusey's argument, we are fearful of confusion in the minds of the inexperienced and younger members of the profession who want to be loyal to the traditions of medicine but who may be asked by local traders to endorse some toilet or pharmaceutical preparation.

May it not be in order for some committee to act in conformity with the customs of the Council on Pharmacy and Chemistry and sit as a court of last resort in approving or disapproving of products which can with propriety be endorsed by doctors? Without such a resource it may be unpleasant for the doctor to disappoint his friend especially when the request for endorsement of a useful and harmless article is based on the example set by an Ex-President of the largest and most powerful medical organization in the world.

In general we do not feel that Dr. Pusey has cleared the atmosphere.

RECENT DEATH

ATWOOD—DR. FRANK SUMNER ATWOOD, medical examiner for the Salem district for more than a quarter of a century, died September 17, 1929, in Salem after a lingering illness. He was born in Newton, June 25, 1857.

Dr. Atwood attended the public schools, Massachusetts Institute of Technology and Harvard Medical School, and was graduated from the latter institution in 1882. He served as city physician of Salem, was a member of the school board and assistant medical examiner of the 10th district. He also was physician and surgeon at the Salem jail and House of Correction, and a Fellow of the Massachusetts Medical Society from 1881 to 1919.

He was a member of the Salem Hospital staff for twenty years, and president of the United States Examining Board of Pensions of Salem.

He is survived by his widow.

OBITUARY

MORTON PRINCE, M.D., LL.D.

DR. PRINCE died at the Peter Bent Brigham Hospital on August 31, 1929, of a complication of disorders in which a failing heart played the chief rôle. He was born in Boston December 21, 1854, a son of Frederick O. Prince, who was at one time Mayor of the city, who ran for Governor, and for a number of years was Secretary of the Democratic National Committee. It was natural, therefore, that his son should always have taken a keen interest in politics and on various occasions expressed his opinions in no uncertain terms. It is a fair assumption that had he not been a neurologist he would have been a politician. As is usual with boys of such antecedents he entered Harvard College in 1875 after preparation at the Boston Latin School and graduated in the class of 1879, which celebrated this year its fiftieth anniversary. After completing his medical training at the Harvard Medical School and in Europe, he began practice in Boston, specializing at first in disorders of the nose and throat at the Boston City Hospital and at the Boston Dispensary. He was also in the early years connected with the Boston Dispensary as District Physician,

and as Neurologist from 1882 to 1886. He became one of the physicians to the Neurological Department of the Boston City Hospital in 1885 and resigned in 1913, associated for a large part of this time with Dr. William N. Bullard and Dr. P. C. Knapp. He was for three years (1895-98) an instructor in Neurology at the Harvard Medical School, and in 1902 accepted the position of Professor of Nervous Diseases at Tufts College Medical School, becoming Professor Emeritus in 1912. The degree of LL.D. was conferred on him by Tufts. In 1910, he gave a series of lectures on abnormal psychology at the University of California. An appointment which gave him much satisfaction was that of Professor of Abnormal Psychology at Harvard College, with headquarters in Cambridge. With the assistance of Dr. Henry A. Murray, he established a psychopathological laboratory and was thus enabled to give instruction to both undergraduates and graduate students in his favorite subject. This appointment was the more noteworthy since it is rare that the University bestows a professorship on a man who has reached his seventieth year, and also from the fact that the subject had never before been given recognition in the academic department.

Mention has been made of his interest in matters outside the immediate confines of his profession. Owing no doubt in part to the family tradition he had a strong leaning toward civic affairs and was identified with many movements of public import, among which were the Public Franchise League of Massachusetts, of which he was secretary, and the Boston Charter Association of which he was chairman. He was also for many years deeply interested in the Boston Police Department. The Great War gave him a peculiar opportunity to satisfy this spirit of service and he gave all his energy to the cause of the Allies both in this country and abroad. Some of his activities were as follows:—from 1914 to 1917 he visited England, France and Japan for propagandist purposes; in 1915, he was chairman of the Serbian Distress Fund and was on the reception committee for the Japanese and Serbian Missions; he spent four years in Serbian relief work and was a special correspondent for the *Boston Herald* at the Paris Peace Conference. He was a state and city Commissioner for the reception of Marshal Foch, and General Diaz of Italy after the war. As a recognition of his services, he was the recipient of orders from Serbia and Japan and the Cross of the Legion of Honor from France.

The tireless energy which enabled him to do all this work served also to urge him on to continuous accomplishment in his chosen field. Although he sometimes wandered away he never lost sight of his main interest in neurology and more especially psychopathology which continued uninterruptedly up to the very end of his life. He was a constant attendant at medical meetings and rarely failed to take part in the discussion, or in many instances to contribute original papers. His club and society membership was large and varied. He was a member, among others, of the Century Association of New York, the Somerset and Tavern Clubs of Boston, the Eastern Yacht Club and the Harvard Clubs of New York and Boston. He was a horseman and an ardent yachtsman, for both of which recreations he was able to find time in his active life. The most important of the medical societies to which he belonged were, The Association of American Physicians, The American Neurological Association, of which he was president in 1910, the American Medical Association, The Boston Society of Psychiatry and Neurology, The Association for Research in Mental and Nervous Diseases, The American Psychopathological Society and The Massachusetts Medical Society.

Prince, however, will be known in the future not so much by what he was as a man and a citizen as by his written work. He had an unusual capacity of expressing himself, as his long list of publications amply testifies. A few years after graduation from the Medical School he set himself the somewhat formidable task of discussing "The Nature of Mind and Human Automatism." This, his first book, was published in 1885. It may well be read today as a straightforward and fearless plea for a materialistic conception of the problem of life and mental activity. It was a remarkable production for a man just past his thirtieth year, and gave ample promise of the strikingly original work which was to follow in a steady stream up to the end of his life. "The Dissociation of Personality" appeared in 1906, a book which excited widespread interest here and abroad, as one of the first and most original studies of the complex phenomena of multiple personality. Had he done nothing else this contribution would have placed him in the front rank of students of abnormal psychology. In 1906 he brought to fruition the ambitious plan of founding a periodical dealing with the whole subject in its various phases, and the first number of *The Journal of Abnormal Psychology* was published in that year, its title later being changed and its scope somewhat enlarged to include Social Psychology. That a journal of this type should have lived and flourished is sufficient proof that it is filling a place of increasing usefulness. Always in step with progress a comprehensive book appeared from his pen in 1914, entitled "The Unconscious," in which he distinctly advanced and clarified our understanding of the so-called Subconscious, by the introduction of the term Co-conscious. Another volume recently published presents the results of his matured experience and unremitting investigation of psychic phenomena. In addition to these books he wrote in 1915 an entertaining

monograph on "The Psychology of the Kaiser" a study of his sentiments and his obsession, in which he attempted to show that his real obsession was a subconscious phobia, a fear of democracy for himself and his House. To all this wealth of literary production must be added a hundred papers on matters relating to general medicine, forensic medicine, neurology, psychology, psychopathology, psychiatry and philosophy, an array of titles which demonstrates without further comment, the extraordinary catholicity of his knowledge and his indefatigable industry.

In the volume "Problems of Personality" presented to him on the occasion of his seventieth birthday, the sub-heading fittingly reads, "Studies Presented to Dr. Morton Prince, Pioneer in American Psychopathology." Significant as many of his other contributions are, his claim to permanent recognition will be in the field of psychopathology, where his chief interest lay and where his originality and insight found its most fruitful expression.

There was no falling off in his enthusiasm as the years went by and the keenness of his restless mind showed no impairment. He was above all liberal-minded and while very sure of the correctness of his own viewpoint, he was generously receptive of new ideas and a perfectly fair controversialist. For example, while not accepting completely the much discussed Freudian hypothesis, he at once saw the value of the new conception and adopted what he thought of value, unlike the antagonistic attitude of many of his colleagues. It was this quality of liberality which went far to give him the leadership which he unquestionably had in a field of research peculiarly open to recrimination and misunderstanding.

To those who had the privilege of knowing him intimately he will be remembered not only as pre-ëminent in his professional work but also as a man of peculiar charm and geniality who enjoyed a yacht race as he did his friends and his work, and who never for a moment during his long life lost the zest of living.

NEWS ITEM

APPOINTMENTS TO THE FACULTY OF THE HARVARD MEDICAL SCHOOL

Among the appointments made by the President and Fellows of Harvard College the list as published includes the following named persons to positions on the faculty of the Medical School:

John H. Mueller, Silas Arnold Houghton Associate Professor of Bacteriology and Immunology; Cyrus H. Fiske, Associate Professor of Biological Chemistry; Hermann L. Blumgart, Associate Professor of Medicine. The Administrative Board for the Medical School is as follows: David L. Edsall, Chairman ex officio; Henry A. Christian, John Lewis Bremer, Walter Bradford Cannon, Simeon B. Wolbach, Hans Zinsser, Worth Hale, Edward Peirson Richardson, Kenneth D. Blackfan, Stanley Cobb, Joseph C. Aub, Edward De Los Churchill.

NOTICE

THE EDWARD K. DUNHAM LECTURES FOR THE PROMOTION OF THE MEDICAL SCIENCES, 1929-1930

Invitations have been sent to those interested in Medical Sciences by the Faculty of Medicine of Harvard University to attend the lectures under the Edward K. Dunham Lectureship.

PROGRAM

"Some Features in the Architecture of Function"

Monday, October 7, "Integrative adaptation."

Wednesday, October 9, "The constancy of the internal environment."

Friday, October 11, "The principal of antagonism."

Monday, October 14, "Stores of material."

At five o'clock at the Harvard Medical School Amphitheater, Building C, by Joseph Barcroft, C.B.E., F.R.S., M.A., M.D. (hon.), Fellow of King's College, Cambridge, Professor of Physiology, Cambridge University.

REPORTS AND NOTICES OF MEETINGS

NEW YORK ACADEMY OF MEDICINE

SECOND ANNUAL GRADUATE FORTNIGHT

The New York Academy of Medicine is making arrangements for a second series of lectures at the Academy, co-ördinated clinics, clinical demonstrations and courses in hospitals and teaching institutions of New York, on the subject of "Functional and Nervous Problems in Medicine and Surgery." The Fortnight will be held during the period October 7 to 19, 1929.

It is believed that this year's subject will attract not only the medical profession generally but also social workers and those especially interested in public welfare. The field includes those functional disturbances which have been much neglected in the last thirty years in comparison with the structural disturbances of the human body.

Evening sessions will be held at the Academy at which well-known authorities will discuss many phases of the general subject. During the mornings and afternoons specially prepared clinical programs will be presented in a number of the leading hospitals of the city. It is planned to present a full day's clinical program in each hospital co-öperating in the Fortnight. Among the special subjects which will be considered in the lectures and clinical programs are:

Sleep and insomnia.
Headache and migraine.
Endocrines and the vegetative system.
The involuntary nervous system.
General survey of visceral neurosis.
Metabolism and the vegetative nervous system.
Allergy and the nervous system.
The surgery of the vegetative system.
Traumatic neuroses
Post-operative neuroses.
The psychoneuroses.
The cardiac neuroses.
The digestive neuroses.
The vascular neuroses.
Shock.
Psychotherapy.

Hysteria.

Mental hygiene in connection with general practice.

Habit problems in children.

The profession is generally invited to attend. No fee will be charged for attendance at any of the meetings or clinics on the program.

CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

The American College of Surgeons will hold its nineteenth annual Clinical Congress in Chicago, October 14-18. Headquarters will be at the Stevens Hotel. An intensive program is being planned to make this home-coming event the greatest in the history of the College. The Hospital Standardization Conference will consist of morning and afternoon sessions on Monday to Thursday inclusive. There will be a series of clinical demonstrations given by George W. Crile, Cleveland; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore; Charles H. Mayo, Rochester, and others.

Monday evening's program will include an address of welcome by the Chairman of the Chicago Committee on Arrangements, Dr. Herman L. Kretschmer, the address of the retiring President, Dr. Franklin H. Martin, Chicago, the inaugural address of the new President, Major-General Merritte W. Ireland, Washington, D. C., and the John B. Murphy Oration in Surgery by Professor D. P. D. Wilkie of Edinburgh. Among the foreign visitors will be: Dr. James Heyman of Stockholm, Dr. Thierry de Martel of Paris, Visconte Aguilar of Madrid, and Mr. Herbert Tilley of London. Tuesday, Wednesday and Thursday evening sessions will consist of scientific papers presented by surgeons from the United States, Canada and from abroad. The Annual Convocation of the College will be held on Friday evening. The Fellowship Address will be delivered by Dr. Glenn Frank, President of the University of Wisconsin. The annual meeting of the Governors and Fellows will be held Thursday afternoon followed by a symposia on cancer and bone sarcoma. An all day session on Traumatic Surgery will be held on Friday in which leaders in industry, labor, indemnity organizations and the medical profession will participate. A special program has been arranged that will be of interest to those whose practise is limited to surgery of the eye, ear, nose and throat. A feature of the Congress will be the showing of surgical films that have been produced under the supervision and approved by the Board on Medical Motion Pictures of the College. New developments in color photography will be demonstrated. In addition to the commercial exhibits, there will be scientific exhibits by the departments of the College. A rate of one and one-half the regular one way fare has been granted on railroads of the United States and Canada to those holding convention certificates.

MASSACHUSETTS MEDICO-LEGAL SOCIETY

The next meeting of the Massachusetts Medico-Legal Society will be held in the Warren Museum at the Harvard Medical School on Wednesday, October 2, at 2.30 P. M.

The topic under discussion will be "Identification in Its Medico-Legal Relations." Dr. George B. Magrath will give an introductory talk on the subject and will be followed by James R. Claflin, Inspector in Charge of the Bureau of Identification, City of Boston.

The Society is particularly fortunate in having Inspector Claflin give an address on this very practical subject with which he is so actively identified. He will cover all the various phases of this work from the Bertillon system to the most recent aspects of finger printing, using lantern slides freely in illustrating.

He will also give practical methods of taking finger printing from individuals, glass, etc.

In addition to our own members all medical examiners and associate medical examiners of the state or of other states are cordially invited to attend.

W. H. Watters, *President.*

THE HARVARD MEDICAL SOCIETY

The first meeting of the Harvard Medical Society will be held at 8:15 Tuesday evening, October 8, in the amphitheatre of the Peter Bent Brigham Hospital. Following the customary presentation and discussion of cases, there will be a talk by Professor D. P. D. Wilkie of the University of Edinburgh on "The Etiology of Biliary Infections." Professor Wilkie will be in Boston at this time as Surgeon-in-Chief pro tempore at the Peter Bent Brigham Hospital.

William P. Murphy, M.D., *Secretary.*

MEDICAL LIBRARY ASSOCIATION ANNUAL MEETING

The annual convention of the Medical Library Association was held in Cleveland on September 3-5, 1929. Headquarters were established at the Hotel Statler and the meetings were held at the Allen Memorial Medical Library and at the Cleveland Public Library.

At the opening session on the morning of September 3, Dr. Carl H. Lenhart, Director of the Cleveland Medical Library, welcomed the members and Dr. Archibald Malloch, President of the Association and Librarian of the New York Academy of Medicine, responded for the Association. Dr. Malloch took for his presidential address the subject Medical Bibliography. The remainder of the session was taken up with papers on the Cleveland Medical Library, Cleveland Public Library, Library of the Rockefeller Institute, and the Welch Medical Library at Baltimore respectively by J. C. Harding, Librarian; Miss Louise Prouty, Vice Librarian; Miss L. M. D. Trask, Librarian and W. G. Shules, Assistant Librarian.

The main topic of the Convention, Fire Insurance and Fire Prevention for Libraries was taken up Wednesday morning. E. B. Berkeley of Owen, Crowell and Company and Frank E. Greene, both of Cleveland read carefully prepared papers on "Insurance for Libraries" and "Fire Prevention" which led to a brisk discussion. James F. Ballard, Director of the Boston Medical Library, spoke on "Appraisal for Insurance Purposes."

Dr. Maurice Fishbein of the American Medical Association described the method of preparation of the Quarterly Cumulative Index-Medicus and stated that in future numbers, new editions of books would be entered. He also offered to consider carefully material selected by the Association from unindexed periodicals for publication in the Index. The Exec-

utive Committee later appointed a committee to formulate a plan for carrying on this work and an Editorial committee for the revision of cards to be sent to the Quarterly Cumulative Index-Medicus.

The afternoon meeting of September 4 was held at the Cleveland Public Library and was given up to the Round Table discussion of the Problems of the Small Library, conducted by Miss Sabina Waterfield of the Mayo Clinic.

The members were the guests of the Cleveland Medical Library Association at a luncheon in the Cleveland Medical Library, at a tea in the Art Museum and on a bus ride through the Parks of Cleveland. The annual dinner was held at the Hotel Statler where Dr. Irving S. Cutter, Dean of Northwestern University Medical School of Chicago, gave an illustrated talk on Puerperal Fever. The books mentioned by Dr. Cutter in his address were exhibited by the Boston Medical Library.

At the business sessions of the Convention it was voted to accept the invitation of Montreal for the 1930 Meeting. The following officers were elected for the ensuing year:

President, Dr. Archibald Malloch, New York Academy of Medicine.

Vice President, Dr. W. W. Francis, Osler Library, McGill University.

Secretary, Miss Sue Biethan, University of Michigan Medical Library.

Treasurer, Miss Mary Louise Marshall, Tulane University Medical Library.

Executive Committee: Chairman, Mr. James F. Ballard, Boston Medical Library; Miss Edna M. Poole, Toronto Academy of Medicine; Mr. J. C. Harding, Cleveland Medical Library; Miss C. A. MacAuliff, Rush Medical School Library; Mr. Alfred L. Robert, College of Physicians and Surgeons, New York.

Honorary Members: Miss M. R. Charlton, Dr. Harvey Cushing, Dr. W. W. Francis, Dr. George Dock, Mr. Wilfrid M. Voynich, Dr. V. C. Vaughan, Dr. W. W. Browning.

The Committee on Revision of the By-Laws submitted its report and the By-Laws were extensively amended and revised. The important changes include the broadening of the Library membership to include allied scientific libraries, the reclassification of membership to establish a new class for library workers and the election of officers by a mail ballot.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

September 27-28—New England Surgical Society. Detailed notice appears on page 606, issue of September 19.

October 2—Massachusetts Medico-Legal Society. Detailed notice appears on page 658.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 657.

October 8—The Harvard Medical Society. Detailed notice appears on page 658.

October 13-18—General meeting of the International Society of Medical Hydrology and International League for Combating Rheumatism. Detailed notice appears on page 288, issue of August 8.

October 14-18—The next annual Clinical Congress of the American College of Surgeons will be held in Chicago.

FRANKLIN H. MARTIN, M.D., General Director,
American College of Surgeons,
40 East Erie Street, Chicago.

October 21, 22, 23, 24, 25—International Assembly of the Inter-State Post-Graduate Medical Association of North America. For detailed notice see page 341, issue of August 15.

November 4, 5, 6 and 7, 1929—Clinical Congress and Eighth Annual Meeting of the American College of Physical Therapy. See page 149, issue of July 18, for details.

December 2-6—The Radiological Society of North America. Complete notice appears on page 149, issue of July 18.

May 5-10, 1930—First International Congress on Mental Hygiene. See page 191, issue of July 25, for details.

DISTRICT MEDICAL SOCIETIES

Bristol North District Medical Society

The Fall Meeting will be held at the Tavern, Mansfield, on Thursday, September 19, at 1 P. M.

J. L. MURPHY, Secretary.

Franklin District Medical Society

The meetings of the Franklin District Medical Society will be held at the Weldon Hotel, Greenfield, Mass., on the second Tuesdays of November, January, March and May, at 11 A. M.

CHARLES MOLINE, Secretary.

Hampden District Medical Society

The next meeting will be held October 22 at the Springfield Academy of Medicine.

The program will be arranged by Dr. L. E. Phaneuf and the Section of Obstetrics and Gynecology.

Details will appear later.

HERVEY L. SMITH, Secretary.

Middlesex East District Medical Society

October—Joint meeting with Middlesex North and Essex North and South.

November 13—At Reading.

January 15—At Boston, Harvard Club.

March 12—At Melrose.

May 13—At Unicorn Country Club.

ALLAN R. CUNNINGHAM, Secretary.

Middlesex South District Medical Society

October 17—Newton Hospital. Surgical, medical and pathological demonstrations. Speaker and complete program to be announced later.

November 6—Censors' meeting.

April 16, 1930—Annual meeting. Commander Hotel, Cambridge. Program to be announced.

Winter meetings—jointly with Suffolk District.

May, 1930—Censors' meeting.

ALEXANDER A. LEVI, Secretary.

Norfolk District Medical Society

Schedule of meetings for the year 1929-1930. Invitations have been sent to the speakers and the list is true only on condition of their acceptance.

October 29—Medfield State Hospital, Harding, Massachusetts. Papers by the Staff.

November 25—Roxbury Masonic Temple. Dr. Roger Graves, "Urology from the Standpoint of the General Practitioner." Surgical discussion. Medical discussion.

January 27, 1930—Roxbury Masonic Temple. "Recent Advances in Diagnosis and Treatment of Syphilis." Speaker to be announced.

February 24, 1930—Roxbury Masonic Temple, 8:00. Dr. Edwin H. Place has been invited to read a paper and has been given carte blanche in the selection of his subject.

March 24, 1930—Roxbury Masonic Temple. Dr. Burton E. Hamilton. Subject to be announced.

May 6, 1930—Annual Meeting. Program to be announced.

The Censors meet for the examination of candidates, November 7, 1929, and May 1, 1930, in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, at 4:00 P. M.

Applications must be in the hands of the Secretary at least one week previous to date of examination.

Owing to inability to engage the Roxbury Masonic Apartments on the last Tuesday of the month, such meetings as will be held in the Roxbury Temple will be held Monday evenings as per the dates above.

FRANK S. CRUICKSHANK,
Secretary, Norfolk District Medical Society.

Plymouth District Medical Society

October 29—Massasoit Hall, 6 Main Street, Brockton, at 8 P. M. Speaker, Dr. Chevalier Jackson of Philadelphia. Subject: "Bronchoscopy as an Aid to the Internist and Surgeon in the Diagnosis and Treatment of Diseases of the Lung." Lantern slides and moving picture demonstration.

All physicians, members of the Massachusetts Medical Society are cordially invited to be present. This is an important meeting.

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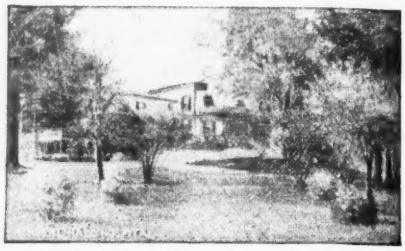

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